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|---------|---------|-----|------------|------|--|---|-------------------|---|
|         |         |     |            |      |  |   |                   | 601744,<br>601975                       |
| HODEC78 | 1008299 | 379 | 1 - 1209   | 2554 | Arg-1 to Cys-8,<br>Ala-11 to Thr-22,<br>Pro-87 to Leu-99,<br>Lys-120 to Glu-144,<br>Leu-179 to Lys-200,<br>Glu-212 to Lys-221,<br>Tyr-280 to Arg-287,<br>Lys-292 to Gly-299,<br>Val-314 to Ser-320,<br>Pro-322 to Pro-340. | H0615: 2, L0766: 2,<br>L0755: 2, L0471: 1,<br>H0356: 1, T0023: 1,<br>L0761: 1, L0794: 1,<br>L0787: 1, L0789: 1,<br>H0519: 1, L0745: 1,<br>L0746: 1, L0591: 1 and<br>L0593: 1. | 12p11.2-<br>p11.1 | 112410,<br>135700,<br>168470,<br>200990 |
| HODEF29 | 1008304 | 380 | 26 - 169   | 2555 | His-8 to Gly-18.   | H0615: 1  |                   |   |
| HODFB71 | 1008307 | 381 | 369 - 671  | 2556 | Lys-54 to Arg-59,<br>Arg-66 to Arg-71.   | L0805: 2, S0134: 1,<br>H0486: 1, H0251: 1,<br>H0235: 1, S0022: 1,<br>H0615: 1, L0667: 1,<br>L0776: 1, L0789: 1,<br>L0758: 1 and H0423: 1.                                     |                   |   |
| HODEF78 | 1008314 | 382 | 3 - 218    | 2557 | Thr-4 to Ser-11,<br>Pro-25 to Ala-31,<br>Thr-38 to His-44.   | H0615: 1  |                   |   |
| HODEL83 | 1008324 | 383 | 3 - 416    | 2558 | Ser-2 to Thr-13,<br>Ile-16 to Ser-26,<br>Pro-28 to Gln-36,<br>Gln-41 to Pro-47,<br>Pro-106 to Asp-111,<br>Trp-127 to Thr-132.  | H0615: 3  |                   |   |
| HHPSH76 | 1008325 | 384 | 244 - 1206 | 2559 | Ser-2 to Ser-7,<br>Leu-51 to Arg-56,   | L0776: 9, L0769: 4,<br>L0789: 4, L0773: 3,  |                   |   |



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|---------|---------|-----|-----------|------|---|--|--|--|
|         |         |     |           |      | Lys-142 to Ser-149,<br>His-178 to Ser-187,<br>Tyr-261 to Gly-267,<br>Arg-272 to Asp-292.  | L0774: 3, L0750: 3,<br>L0761: 2, L0771: 2,<br>L0803: 2, L0807: 2,<br>L0565: 2, L0745: 2,<br>S0376: 1, H0549: 1,<br>H0453: 1, H0587: 1,<br>S0010: 1, S0324: 1,<br>H0201: 1, H0687: 1,<br>H0428: 1, H0538: 1,<br>L0763: 1, L0770: 1,<br>L0800: 1, L0643: 1,<br>L0764: 1, L0794: 1,<br>L0766: 1, L0775: 1,<br>L0806: 1, S0328: 1,<br>H0521: 1, L0780: 1,<br>L0758: 1, L0759: 1,<br>L0605: 1 and S0462: 1. |  |  |
| HBGBE52 | 1008326 | 385 | 782 - 663 | 2560 | Gly-1 to Glu-26,<br>Val-28 to Leu-35.   | H0181: 2, L0599: 2,<br>H0014: 1, L0365: 1,<br>L0665: 1, S0052: 1,<br>S0216: 1, H0684: 1,<br>S0152: 1, S0188: 1,<br>H0345: 1 and L0366: 1.  |  |  |
| HBQAB30 | 1008327 | 386 | 3 - 737   | 2561 | Asn-40 to Arg-68,<br>Ser-86 to Ala-92,<br>Ile-129 to Lys-145,<br>Glu-162 to Ala-175,<br>Glu-181 to Thr-204,<br>Ser-206 to Lys-214,<br>Leu-222 to Thr-231. | H0551: 2, S0354: 1,<br>H0229: 1, S0049: 1,<br>H0135: 1, H0529: 1 and<br>S0028: 1.  |  |  |



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| HLHCB31 | 1008332 | 387 | 1 - 558  | 2562 | Asn-7 to Lys-19.   | L0750: 4, L0777: 3,<br>L0758: 3, S0354: 2,<br>S0360: 2, H0039: 2,<br>H0622: 2, H0617: 2,<br>L0666: 2, H0520: 2,<br>L0756: 2, L0759: 2,<br>S0358: 1, H0549: 1,<br>H0253: 1, H0009: 1,<br>L0471: 1, H0620: 1,<br>H0024: 1, H0083: 1,<br>H0688: 1, L0142: 1,<br>H0135: 1, H0038: 1,<br>H0100: 1, H0646: 1,<br>L0763: 1, L0761: 1,<br>L0764: 1, L0662: 1,<br>L0767: 1, L0794: 1,<br>L0653: 1, L0659: 1,<br>L0809: 1, L0665: 1,<br>H0144: 1, H0547: 1,<br>H0672: 1, L0741: 1,<br>L0743: 1, L0744: 1,<br>L0753: 1 and S0276: 1. | L0750: 4, S0007: 2,<br>H0014: 2, H0616: 2,<br>L0005: 1, H0574: 1,<br>H0632: 1, H0156: 1,<br>H0169: 1, L0769: 1,<br>L0805: 1, L0647: 1,<br>H0648: 1, L0779: 1 and<br>L0758: 1. | 16q13-<br>16q21 | 114835,<br>118470,<br>132700,<br>172490,<br>209900,<br>600968 |
| HPFDV51 | 1008335 | 388 | 22 - 216 | 2563 | Thr-5 to His-10,<br>Pro-28 to Thr-40,<br>Lys-46 to His-54. | H0670: 4, S0007: 2,<br>H0014: 2, H0616: 2,<br>L0005: 1, H0574: 1,<br>H0632: 1, H0156: 1,<br>H0169: 1, L0769: 1,<br>L0805: 1, L0647: 1,<br>H0648: 1, L0779: 1 and<br>L0758: 1.   |   |                 |   |



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| HTEDY04 | 1008336 | 389 | 2 - 832   | 2564 | Arg-2 to Gly-9,<br>Arg-38 to Lys-46,<br>Ser-53 to Ser-73,<br>Asp-79 to Ala-84,<br>Leu-129 to Glu-136,<br>Glu-202 to Arg-210,<br>Glu-216 to Ala-231,<br>Glu-234 to Glu-254,<br>Lys-259 to Leu-265. | L0803: 8, L0758: 8,<br>L0809: 6, L0748: 6,<br>H0038: 5, L0439: 5,<br>H0616: 4, H0670: 4,<br>L0756: 4, L0731: 4,<br>L0794: 3, L0750: 3,<br>L0770: 2, L0805: 2,<br>L0776: 2, L0602: 2,<br>L0779: 2, S0276: 2,<br>S0282: 1, S0410: 1,<br>H0369: 1, H0549: 1,<br>H0618: 1, H0252: 1,<br>H0615: 1, H0424: 1,<br>H0213: 1, H0032: 1,<br>H0212: 1, H0068: 1,<br>T0067: 1, S0438: 1,<br>L0769: 1, L0638: 1,<br>L0804: 1, L0775: 1,<br>L0806: 1, L0527: 1,<br>L0782: 1, L0788: 1,<br>L0789: 1, L0666: 1,<br>L0664: 1, L0665: 1,<br>H0658: 1, H0672: 1,<br>S3012: 1, L0751: 1,<br>L0745: 1, L0777: 1,<br>L0780: 1, L0759: 1 and<br>L0581: 1. | 1p35.1 | 118210,<br>120550,<br>120570,<br>120575,<br>121800,<br>130500,<br>133200,<br>171760,<br>171760,<br>185470,<br>230350,<br>255800,<br>602771 |  |
| HODEG13 | 1008337 | 390 | 2 - 166   | 2565 | Gln-2 to His-10,<br>Lys-21 to Glu-33.   | H0615: 3   |        |  |  |
| HHPEK16 | 1008345 | 391 | 109 - 435 | 2566 |   | H0663: 1, H0125: 1,  |        |  |  |



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|---------|---------|-----|----------|-------|--|--|--|--|--|--|
| HARAL81 | 1008349 | 392 | 220 - 20 | 2567. | Ser-24 to Ala-30, .<br>Arg-55 to Ser-62. | S0418: 1, S0356: 1,<br>H0051: 1, H0648: 1 and<br>H0543: 1.<br>L0752: 6, L0663: 5,<br>L0646: 3, L0754: 3,<br>L0747: 3, H0031: 2,<br>L0794: 2, H0659: 2,<br>H0658: 2, L0748: 2,<br>H0556: 1, H0657: 1,<br>L0005: 1, S0354: 1,<br>S0358: 1, S0410: 1,<br>H0637: 1, H0441: 1,<br>H0455: 1, T0082: 1,<br>H0615: 1, S0440: 1,<br>H0633: 1, S0344: 1,<br>S0426: 1, H0529: 1,<br>L0770: 1, L0769: 1,<br>L0637: 1, L0374: 1,<br>L0771: 1, L0648: 1,<br>L0662: 1, L0766: 1,<br>L0650: 1, L0774: 1,<br>L0775: 1, L0805: 1,<br>L0776: 1, L0655: 1,<br>L0542: 1, L0782: 1,<br>L0809: 1, L0666: 1,<br>L0664: 1, L0665: 1,<br>L0352: 1, H0648: 1,<br>H0521: 1, H0696: 1,<br>S0406: 1, L0740: 1,<br>L0749: 1, L0731: 1 and |  |  |  |  |
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|---------|---------|-----|------------|------|---|--|---|--|--|
| HFTAU42 | 1008350 | 393 | 987 - 1100 | 2568 |   |  | H0444: 1.<br>S0360: 2, H0123: 2,<br>L0649: 2, L0803: 2,<br>L0666: 2, L0740: 2,<br>L0747: 2, L0750: 2,<br>L0755: 2, H0624: 1,<br>S0418: 1, H0393: 1,<br>H0553: 1, H0124: 1,<br>H0090: 1, S0440: 1,<br>H0646: 1, S0142: 1,<br>L0662: 1, L0776: 1,<br>L0659: 1, L0665: 1,<br>L0438: 1, H0547: 1,<br>H0519: 1, H0659: 1,<br>H0658: 1, H0648: 1,<br>L0777: 1, L0752: 1,<br>H0445: 1, L0599: 1,<br>S0242: 1 and H0542: 1. |  |  |
| HETDA81 | 1008358 | 394 | 3 - 377    | 2569 | Thr-5 to Ser-12,<br>Thr-74 to Pro-80.                         |  | H0046: 2 and H0648:<br>1.   |  |  |
| HODEI92 | 1008359 | 395 | 1 - 495    | 2570 | His-31 to Asp-45,<br>Glu-56 to Ser-64,<br>Pro-118 to Asp-131. |  | L0747: 4, L0751: 3,<br>H0615: 2, L0794: 2,<br>L0665: 2, H0659: 2,<br>L0777: 2, L0596: 2,<br>H0341: 1, H0333: 1,<br>H0510: 1, H0328: 1,<br>H0039: 1, L0764: 1,<br>L0657: 1, H0658: 1,<br>S0328: 1 and L0758: 1.  |  |  |
| HODEB58 | 1008372 | 396 | 3 - 455    | 2571 | Thr-25 to Ser-36.   |  | H0360: 14, L0809: 11,   |  |  |



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|  | L0747: 9, L0749: 9,<br>L0777: 9, L0803: 8,<br>L0731: 8, L0774: 7,<br>L0794: 6, S0408: 5,<br>L0783: 5, L0775: 4,<br>L0438: 4, H0648: 4,<br>L0756: 4, L0623: 3,<br>H0575: 3, L0471: 3,<br>H0373: 3, H0615: 3,<br>L0520: 3, L0768: 3,<br>S0126: 3, S0328: 3,<br>S0406: 3, L0779: 3,<br>L0758: 3, S0116: 2,<br>S0444: 2, S0360: 2,<br>H0393: 2, S0222: 2,<br>H0156: 2, T0082: 2,<br>H0052: 2, H0014: 2,<br>H0494: 2, S0440: 2,<br>L0763: 2, L0769: 2,<br>L0764: 2, L0517: 2,,<br>H0684: 2, H0670: 2,<br>H0672: 2, H0539: 2,<br>L0740: 2, L0753: 2,<br>L0757: 2, L0759: 2,<br>S0031: 2, L0588: 2,<br>L0581: 2, L0595: 2,<br>S0424: 2, H0171: 1,<br>T0002: 1, H0218: 1,<br>H0685: 1, S0342: 1,<br>S0402: 1, T0049: 1, |  |  |  |  |  |
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|---------|---------|-----|------------|------|---|--|--|---|--|--|
|         |         |     |            |      |   |  | L0653: 1, L0776: 1,<br>L0659: 1, L0526: 1,<br>L0782: 1, L5622: 1,<br>L0788: 1, H0689: 1,<br>H0690: 1, H0682: 1,<br>H0658: 1, S0378: 1,<br>H0696: 1, H0134: 1,<br>S0404: 1, H0727: 1,<br>S0028: 1, L0742: 1,<br>L0752: 1, S0434: 1,<br>L0589: 1, S0192: 1,<br>H0423: 1, H0422: 1 and<br>S0458: 1. |   |  |  |
| HODEG86 | 1008379 | 397 | 411 - 548  | 2572 |   |  | H0615: 3   |   |  |  |
| HODFA57 | 1008396 | 398 | 138 - 221  | 2573 | Lys-1 to Lys-6,<br>Leu-10 to Asp-17,<br>Pro-19 to Arg-28.                             |  | H0615: 4   |   |  |  |
| HODFB31 | 1008401 | 399 | 1 - 276    | 2574 | Pro-35 to Lys-40,<br>Glu-72 to Gly-77,<br>Pro-85 to Val-90.                           |  | H0615: 2, S0278: 1,<br>S0002: 1, H0555: 1 and<br>S0026: 1.   |   |  |  |
| HTEMP79 | 1008406 | 400 | 317 - 658  | 2575 | Leu-14 to Ser-19.   |  | L0758: 6, L0779: 4,<br>H0038: 3, H0616: 2,<br>L0593: 2, H0644: 1,<br>L0794: 1 and L0594: 1.  |   |  |  |
| HODEI59 | 1008423 | 401 | 161 - 1291 | 2576 | His-6 to Ser-11,<br>Ser-122 to Asn-128,<br>Leu-216 to Asp-221,<br>Ser-323 to His-328. |  | H0031: 12, H0521: 11,<br>H0542: 11, L0745: 9,<br>H0266: 7, H0547: 7,<br>H0551: 6, H0013: 5,<br>S0152: 5, T0049: 4,<br>H0169: 4, H0494: 4,  | 20q12-q13.1, 256540, -<br>600281,<br>600281 |  |  |



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|  | L0748: 4, L0591: 4,<br>H0661: 3, H0251: 3,<br>H0046: 3, H0644: 3,<br>H0591: 3, S0002: 3,<br>H0520: 3, S0126: 3,<br>S0028: 3, L0439: 3,<br>L0754: 3, L0757: 3,<br>L0596: 3, H0423: 3,<br>H0171: 2, S0134: 2,<br>S0354: 2, S0358: 2,<br>H0580: 2, S0046: 2,<br>H0587: 2, H0497: 2,<br>T0039: 2, H0599: 2,<br>H0050: 2, L0471: 2,<br>T0010: 2, H0615: 2,<br>H0039: 2, H0090: 2,<br>H0038: 2, H0040: 2,<br>H0488: 2, T0042: 2,<br>S0150: 2, H0529: 2,<br>L0649: 2, L0659: 2,<br>L0438: 2, H0519: 2,<br>H0660: 2, H0555: 2,<br>S3014: 2, S0027: 2,<br>L0777: 2, L0593: 2,<br>L0601: 2, H0653: 2,<br>H0543: 2, H0170: 1,<br>H0556: 1, H0341: 1,<br>S0001: 1, H0664: 1,<br>H0662: 1, H0638: 1,<br>S0418: 1, S0420: 1, |  |  |  |  |  |
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|  | S0356: 1, H0619: 1,<br>H0393: 1, S0278: 1,<br>H0431: 1, H0608: 1,<br>H0442: 1, H0586: 1,<br>H0643: 1, H0486: 1,<br>H0156: 1, H0575: 1,<br>H0036: 1, S0346: 1,<br>H0581: 1, H0052: 1,<br>H0263: 1, H0544: 1,<br>H0123: 1, H0011: 1,<br>H0014: 1, H0355: 1,<br>H0375: 1, H0188: 1,<br>H0687: 1, H0292: 1,<br>H0328: 1, H0428: 1,<br>H0622: 1, T0023: 1,<br>H0628: 1, H0383: 1,<br>H0165: 1, L0455: 1,<br>H0124: 1, H0135: 1,<br>H0268: 1, H0623: 1,<br>H0100: 1, H0429: 1,<br>H0561: 1, H0509: 1,<br>H0646: 1, H0538: 1,<br>L0800: 1, L0626: 1,<br>L0387: 1, L0654: 1,<br>H0701: 1, H0593: 1,<br>H0711: 1, H0690: 1,<br>H0435: 1, H0658: 1,<br>H0672: 1, L0602: 1,<br>S0206: 1, L0751: 1,<br>L0746: 1, L0731: 1, |  |
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|         |         |     |           |      |  |  | H0444: 1, H0445: 1,<br>S0434: 1, L0587: 1,<br>L0588: 1, L0581: 1,<br>L0604: 1, L0594: 1,<br>S0196: 1, H0506: 1 and<br>H0293: 1.   |      |        |     |
| HODEF94 | 1008429 | 402 | 2 - 94    | 2577 | Pro-19 to Ser-29.  |  | H0615: 2, H0090: 1,<br>S0002: 1 and H0478: 1.   |      |        |     |
| HPFCZ53 | 1008445 | 403 | 236 - 769 | 2578 | Lys-1 to Lys-23.   |  | L0754: 40, L0740: 8,<br>H0295: 2, H0663: 2,<br>H0169: 2, H0068: 2,<br>L0770: 2, L0662: 2,<br>L0789: 2, L0748: 2,<br>L0751: 2, L0755: 2,<br>L0589: 2, S0420: 1,<br>L0005: 1, H0586: 1,<br>H0156: 1, H0032: 1,<br>H0100: 1, H0494: 1,<br>L0803: 1, L0806: 1,<br>L0809: 1, H0660: 1,<br>H0672: 1, S0152: 1,<br>L0744: 1, L0779: 1,<br>L0777: 1, L0780: 1,<br>L0591: 1, L0593: 1 and<br>L0601: 1. | 6p24 | 134570 |     |
| HWACN71 | 1008764 | 404 | 96 - 1268 | 2579 | Val-7 to Gly-14,<br>Lys-46 to Ala-52,<br>Leu-82 to Phe-89,<br>Lys-94 to Ser-99,<br>Pro-101 to Arg-108, |  | AR096: 7, AR053: 5,<br>AR089: 4, AR039: 3,<br>AR060: 2, AR055: 2,<br>AR052: 2, AR033: 2,<br>AR061: 2, AR104: 2  |      |        | --- |



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|---------|---------|-----|------------|------|--|---|--|--------|------------------------------|
|         |         |     |            |      |  | Ala-123 to Gly-129,<br>Lys-154 to Gly-164,<br>Arg-274 to Glu-287,<br>Asp-294 to Thr-309,<br>Gln-324 to Ala-334,<br>Pro-343 to Asn-359,<br>Lys-368 to Glu-385. | H0457: 2, H0494: 2,<br>H0740: 1, H0581: 1,<br>H0083: 1, L0770: 1,<br>L0769: 1, L0764: 1,<br>L0791: 1 and H0727: 1.   |        |                              |
| HOFMU69 | 1009017 | 405 | 342 - 1151 | 2580 |  | Ser-70 to Trp-88,<br>Lys-154 to Asp-161,<br>Tyr-265 to Lys-270.   | AR039: 17, AR052:<br>11, AR104: 7, AR033:<br>7, AR096: 7, AR053:<br>6, AR089: 6, AR060:<br>3, AR061: 3, AR055:<br>3<br>H0415: 2  |        |                              |
| HSKNP59 | 1009095 | 406 | 417 - 554  | 2581 |  | Pro-10 to Pro-16.   | AR039: 15, AR089:<br>10, AR053: 10, AR096:<br>9, AR055: 8, AR060:<br>7, AR033: 6, AR061:<br>5, AR104: 4<br>L0510: 3, L0504: 1,<br>L0502: 1, L0499: 1,<br>L0514: 1, L0512: 1 and<br>S3012: 1. |        |                              |
| HETBR71 | 1009343 | 407 | 155 - 658  | 2582 |  | Lys-5 to Phe-58.  | L0731: 10, L0759: 6,<br>L0782: 4, L0774: 3,<br>H0046: 2, H0620: 2,<br>L0598: 2, L0769: 2,<br>L0805: 2, L0663: 2,<br>S0380: 2, L0754: 2,<br>L0756: 2, H0170: 1,                               | Xq22.1 | 301201,<br>301835,<br>311850 |



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|---------|---------|-----|---------|------|------------------|---|--|--|
| HE2ES17 | 1009349 | 408 | 3 - 914 | 2583 | Glu-1 to Glu-13. | H0384: 1, H0484: 1,<br>H0664: 1, S0358: 1,<br>S0360: 1, S0410: 1,<br>H0580: 1, H0549: 1,<br>S0222: 1, H0427: 1,<br>H0156: 1, S0010: 1,<br>H0194: 1, H0545: 1,<br>H0375: 1, H0644: 1,<br>S0366: 1, H0038: 1,<br>S0210: 1, L0631: 1,<br>L0800: 1, L0764: 1,<br>L0662: 1, L0766: 1,<br>L0775: 1, L0375: 1,<br>L0776: 1, L0659: 1,<br>L0647: 1, H0144: 1,<br>H0547: 1, H0660: 1,<br>H0672: 1, S0330: 1,<br>H0539: 1, S0152: 1,<br>S0044: 1, H0694: 1,<br>S0406: 1, L0779: 1,<br>L0758: 1, L0605: 1 and<br>H0653: 1. |  |  |
|         |         |     |         |      |                  | L0663: 3, L0740: 3,<br>L0752: 3, L0758: 3,<br>L0759: 3, L0664: 2,<br>L0665: 2, L0439: 2,<br>L0756: 2, H0624: 1,<br>H0170: 1, H0685: 1,<br>S0003: 1, H0615: 1,<br>H0644: 1, H0616: 1,  |  |  |



|         |         |     |           |      |  |  |   |       |  |  |
|---------|---------|-----|-----------|------|--|--|---|-------|--|--|
|         |         |     |           |      |  |  | L0598: 1, L0649: 1,<br>L0666: 1, H0660: 1,<br>H0648: 1, H0672: 1,<br>H0696: 1, H0555: 1,<br>L0779: 1, L0755: 1,<br>L0592: 1 and S0192: 1.   |       |  |  |
| HELM06  | 1009362 | 409 | 14 - 349  | 2584 | Asp-57 to Ala-62,<br>Gly-98 to Pro-112.  |  | S0045: 1  |       |  |  |
| HE2AG50 | 1009365 | 410 | 43 - 132  | 2585 | Gly-1 to Ser-6,<br>Pro-20 to Ile-30.     |  | AR089: 1, AR033: 1,<br>AR060: 0, AR096: 0,<br>AR061: 0, AR055: 0,<br>AR039: 0<br>H0170: 1, H0574: 1,<br>H0052: 1, H0048: 1 and<br>L0766: 1. |       |  |  |
| HE2ES61 | 1009388 | 411 | 555 - 427 | 2586 |  |  | H0305: 2, L0663: 2,<br>H0170: 1, S0003: 1,<br>L0803: 1 and H0651: 1.  |       |  |  |
| HE2SO43 | 1009398 | 412 | 1 - 408   | 2587 | Pro-65 to Lys-70,<br>His-112 to Gly-131. |  | H0624: 1  |       |  |  |
| HLHCI07 | 1009403 | 413 | 91 - 2    | 2588 | Arg-5 to Gly-11.                         |  | H0208: 1, H0123: 1<br>and H0024: 1.   | 13q   |  |  |
| HTTBR65 | 1009414 | 414 | 1 - 357   | 2589 | Gly-3 to Thr-9,<br>Arg-30 to Gly-39.     |  | H0305: 1 and H0040:<br>1.   | 17q21 | 109270,<br>109270,<br>109270,<br>109270,<br>109270,<br>113705,<br>113705,<br>144200, |  |



|         |         |     |           |      |  |          |  |   |
|---------|---------|-----|-----------|------|--|----------|--|---|
|         |         |     |           |      |  |          |  | 148065,<br>148066,<br>148066,<br>148067,<br>148067,<br>148069,<br>148080,<br>154275,<br>168610,<br>171190,<br>176705,<br>185800,<br>200350,<br>221820,<br>232200,<br>249000,<br>252920,<br>253250,<br>600119,<br>600119,<br>601363,<br>601844 |
| HPFCV71 | 1009453 | 415 | 434 - 586 | 2590 |  |          | H0328: 1, H0615: 1,<br>H0169: 1, L0807: 1 and<br>L0754: 1. |   |
| HCABR46 | 1009479 | 416 | 169 - 423 | 2591 | Ala-9 to Glu-19,<br>Glu-40 to Asn-46,<br>Asp-55 to Ser-66. | H0125: 1 | 19p13.2  | 108725,<br>120700,<br>133171,<br>143890,<br>147670,   |



|         |         |     |          |      |   |  |   |  |
|---------|---------|-----|----------|------|---|--|---|--|
|         |         |     |          |      |   |  | 147670,<br>147670,<br>151440,<br>164953,<br>231670,<br>600276,<br>600957,<br>601843 |  |
| HCRCB80 | 1009482 | 417 | 78 - 479 | 2592 | Gln-34 to Ala-45,<br>Glu-47 to Leu-52,<br>Lys-113 to Gln-121. | H0170: 1, H0327: 1,<br>H0038: 1, L0758: 1 and<br>S0276: 1.   | 22q13.2-<br>q13.31  | 188826,<br>250100,<br>250800,<br>250800  |
| HPMLW78 | 1009833 | 418 | 1 - 648  | 2593 | Asn-12 to Tyr-19,<br>Glu-33 to Glu-38,<br>Arg-53 to Ser-62.   | L0769: 4, L0751: 4,<br>L0471: 2, H0024: 2,<br>L0768: 2, L0748: 2,<br>L0731: 2, L0595: 2,<br>H0685: 1, S0001: 1,<br>H0052: 1, H0050: 1,<br>H0012: 1, H0644: 1,<br>H0617: 1, H0040: 1,<br>H0100: 1, L0637: 1,<br>L0662: 1, L0809: 1,<br>L0665: 1, H0547: 1,<br>H0519: 1, L0780: 1 and<br>L0591: 1. | 1q23  | 104770,<br>107300,<br>107670,<br>131210,<br>134638,<br>136132,<br>145001,<br>146740,<br>146740,<br>146740,<br>146790,<br>173610,<br>176310,<br>186780,<br>191030,<br>227400,<br>227400,<br>601412, |



|         |         |     |           |      |  |   |  |                   |
|---------|---------|-----|-----------|------|--|---|--|-------------------|
|         |         |     |           |      |  |   |  | 601652,<br>602491 |
| HODJK75 | 1009842 | 419 | 3 - 428   | 2594 | Ala-26 to Ile-34.  | H0615: 2  |  |                   |
| HODJX27 | 1009854 | 420 | 1 - 123   | 2595 | Ser-27 to Gly-32.  | H0615: 1  |  |                   |
| HODJV85 | 1009857 | 421 | 366 - 166 | 2596 | Asp-1 to Gly-9,<br>Glu-17 to Lys-23.   | H0615: 1  |  |                   |
| HOOJO38 | 1009918 | 422 | 718 - 116 | 2597 | Ala-76 to Lys-87,<br>Glu-110 to Gln-115,<br>Ser-123 to Lys-131,<br>Lys-168 to Ala-174,<br>Pro-178 to Ala-193,<br>Ala-196 to Ala-201. | L0493: 55, L0504: 46,<br>L0512: 42, L0510: 41,<br>L0507: 39, L0509: 35,<br>L0511: 30, L0502: 29,<br>L0500: 25, L0499: 20,<br>L0503: 19, L0498: 13,<br>L0514: 13, H0648: 13,<br>L0506: 10, H0341: 9,<br>H0046: 7, L0505: 7,<br>L0497: 7, H0670: 7,<br>L0520: 6, H0659: 6,<br>S0380: 6, L0508: 5,<br>S0027: 5, S0114: 4,<br>H0657: 4, S0045: 4,<br>H0100: 4, L0515: 4,<br>L0526: 4, L0664: 4,<br>S0126: 4, H0658: 4,<br>S0378: 4, S0028: 4,<br>L0588: 4, L0362: 4,<br>S0026: 4, H0333: 3,<br>H0318: 3, H0090: 3,<br>H0413: 3, S0142: 3,<br>L0646: 3, S0374: 3,<br>H0689: 3, L0750: 3, |  |                   |



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|--|--|--|--|--|--|--|--|--|--|
|  |  |  |  |  | H0445: 3, L0361: 3,<br>H0352: 3, H0220: 2,<br>T0049: 2, H0305: 2,<br>H0125: 2, S0358: 2,<br>S0046: 2, S0222: 2,<br>H0643: 2, L0622: 2,<br>H0013: 2, H0251: 2,<br>H0014: 2, H0188: 2,<br>S0003: 2, H0364: 2,<br>H0031: 2, H0040: 2,<br>H0087: 2, H0625: 2,<br>H0647: 2, S0422: 2,<br>L0501: 2, L0521: 2,<br>L0375: 2, L0657: 2,<br>H0365: 2, H0690: 2,<br>H0436: 2, S0390: 2,<br>S0037: 2, L0742: 2,<br>L0748: 2, L0605: 2,<br>L0603: 2, H0665: 2,<br>H0542: 2, H0543: 2,<br>L0718: 2, H0624: 1,<br>H0170: 1, H0171: 1,<br>H0265: 1, T0002: 1,<br>H0222: 1, H0686: 1,<br>H0685: 1, S0040: 1,<br>H0381: 1, S0116: 1,<br>S0212: 1, H0255: 1,<br>H0669: 1, H0671: 1,<br>H0638: 1, S0354: 1,<br>S0360: 1, H0580: 1, |  |  |  |  |
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|---------|---------|-----|----------|------|--|--|--|-------|---|
| HAOSI69 | 1009949 | 423 | 1 - 1155 | 2598 |  |  | L0775: 1, L0651: 1,<br>L0776: 1, L0659: 1,<br>L0517: 1, L0540: 1,<br>L0518: 1, L0783: 1,<br>L0384: 1, L0541: 1,<br>L0543: 1, L0367: 1,<br>L0368: 1, L0532: 1,<br>L0663: 1, L0665: 1,<br>S0428: 1, H0691: 1,<br>H0684: 1, H0660: 1,<br>H0666: 1, H0672: 1,<br>H0651: 1, H0522: 1,<br>H0187: 1, H0576: 1,<br>S0392: 1, S0118: 1,<br>S0206: 1, S0032: 1,<br>L0751: 1, L0747: 1,<br>L0777: 1, L0752: 1,<br>H0444: 1, L0596: 1,<br>L0590: 1, L0604: 1,<br>L0601: 1, H0667: 1 and<br>H0293: 1. | 11q13 | 102200,<br>106100,<br>131100,<br>131100,<br>131100,<br>133780,<br>147050,<br>153700,<br>161015, |
|         |         |     |          |      |  |  | L0757: 22, L0601: 20,<br>L0747: 14, S0152: 13,<br>L0740: 13, H0617: 10,<br>L0748: 10, L0777: 9,<br>H0623: 7, S0126: 6,<br>S0212: 5, S0360: 5,<br>L0771: 5, L0744: 5,<br>L0759: 5, L0596: 5,<br>H0624: 4, H0549: 4,   |       |   |



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| L0766: 2, L0806: 2,<br>L0805: 2, L0664: 2,<br>S0374: 2, H0658: 2,<br>H0539: 2, L0602: 2,<br>S3014: 2, S0028: 2,<br>L0779: 2, L0599: 2,<br>S0194: 2, H0677: 2,<br>H0171: 1, H0685: 1,<br>H0716: 1, H0295: 1,<br>H0294: 1, H0661: 1,<br>H0662: 1, H0450: 1,<br>S0418: 1, S0356: 1,<br>S0354: 1, H0208: 1,<br>S0476: 1, H0645: 1,<br>S6022: 1, S0222: 1,<br>H0298: 1, H0586: 1,<br>H0486: 1, T0039: 1,<br>T0040: 1, H0013: 1,<br>H0196: 1, H0251: 1,<br>H0205: 1, H0204: 1,<br>H0596: 1, H0041: 1,<br>H0123: 1, H0199: 1,<br>H0024: 1, L0163: 1,<br>H0051: 1, S0051: 1,<br>T0010: 1, H0355: 1,<br>S0022: 1, H0252: 1,<br>H0688: 1, L0194: 1,<br>L0483: 1, L0055: 1,<br>H0598: 1, S0036: 1,<br>H0488: 1, H0268: 1, |
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|---------|---------|-----|---------|------|--|---|--|--|
|         |         |     |         |      |  | H0059: 1, L0564: 1,<br>S0438: 1, H0633: 1,<br>H0646: 1, S0208: 1,<br>S0210: 1, S0002: 1,<br>H0529: 1, L0369: 1,<br>L5566: 1, L0372: 1,<br>L0642: 1, L0767: 1,<br>L0522: 1, L0774: 1,<br>L0655: 1, L0629: 1,<br>L0656: 1, L0634: 1,<br>L0659: 1, L0542: 1,<br>L0792: 1, L0532: 1,<br>L0666: 1, H0144: 1,<br>H0693: 1, H0593: 1,<br>H0689: 1, H0683: 1,<br>H0660: 1, H0672: 1,<br>S0330: 1, H0696: 1,<br>S0406: 1, S0037: 1,<br>L0743: 1, L0751: 1,<br>L0750: 1, L0756: 1,<br>L0780: 1, L0752: 1,<br>L0755: 1, S0031: 1,<br>H0445: 1, H0343: 1,<br>L0589: 1, H0665: 1,<br>S0192: 1, S0424: 1,<br>S0460: 1 and S0456: 1. |  |  |
| HSDIY67 | 1010157 | 424 | 3 - 692 | 2599 | Ala-7 to Arg-18,<br>Pro-37 to Asp-43,<br>Asn-96 to Arg-103,<br>Lys-115 to Ser-122, | H0658: 4, H0551: 3,<br>L0439: 3, H0686: 2,<br>H0441: 2, H0013: 2,<br>S0152: 2, L0744: 2,  |  |  |



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|---------|---------|-----|---------|------|--|--|--|--|--|
|         |         |     |         |      | Ile-162 to Asn-168,<br>Arg-179 to Asp-189,<br>Asp-206 to Asn-<br>215,<br>Glu-222 to Val-230. | L0759: 2, S0260: 2,<br>S0360: 1, S0045: 1,<br>L0394: 1, H0009: 1,<br>L0471: 1, H0012: 1,<br>H0620: 1, T0003: 1,<br>H0188: 1, H0428: 1,<br>L0564: 1, L0763: 1,<br>L0770: 1, L0769: 1,<br>L0637: 1, L0646: 1,<br>L0643: 1, L0775: 1,<br>L0805: 1, S0028: 1,<br>L0779: 1, L0592: 1,<br>S0276: 1, S0412: 1 and<br>H0506: 1.  |  |  |  |
| HSDZM65 | 1010299 | 425 | 2 - 337 | 2600 | Ser-18 to Thr-23,<br>Val-91 to Gln-99.   | L0758: 8, L0803: 6,<br>L0740: 6, L0809: 5,<br>L0794: 4, L0756: 4,<br>L0752: 4, S0360: 3,<br>H0551: 3, L0527: 3,<br>L0783: 3, H0689: 3,<br>L0777: 3, L0731: 3,<br>T0049: 2, S0222: 2,<br>S0049: 2, H0163: 2,<br>L0766: 2, L0804: 2,<br>L0659: 2, L0518: 2,<br>L0438: 2, H0547: 2,<br>H0521: 2, H0696: 2,<br>L0779: 2, L0485: 2,<br>H0170: 1, H0171: 1,<br>H0656: 1, H0381: 1, |  |  |  |



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|---------|---------|-----|-----------|------|---|---|--|--|
| HPDOC39 | 1010400 | 426 | 144 - 608 | 2601 | Ser-16 to Val-25,<br>His-105 to Lys-125,<br>Tyr-147 to Ser-155. | S0446: 1 and H0506: 1,<br>S0360: 8, S0358: 7,<br>H0547: 6, H0561: 5,<br>S0126: 5, S0418: 4,<br>L0766: 4, L0748: 4,<br>L0755: 4, L0362: 4,<br>H0686: 3, H0591: 3,<br>H0521: 3, L0740: 3,<br>L0777: 3, L0752: 3,<br>L0731: 3, L0758: 3,<br>H0445: 3, L0595: 3,<br>S0196: 3, H0656: 2,<br>H0663: 2, S0356: 2,<br>S0376: 2, S0444: 2,<br>S0046: 2, S0278: 2,<br>H0331: 2, H0574: 2,<br>H0581: 2, H0052: 2,<br>H0046: 2, H0266: 2,<br>S0003: 2, H0090: 2,<br>H0623: 2, T0042: 2,<br>H0494: 2, L0768: 2,<br>L0803: 2, L0659: 2,<br>L0809: 2, H0144: 2,<br>H0520: 2, H0522: 2,<br>L0439: 2, L0596: 2,<br>L0591: 2, L0601: 2,<br>H0136: 2, S0242: 2,<br>H0423: 2, H0265: 1,<br>H0341: 1, S0001: 1,<br>H0305: 1, H0589: 1, |  |  |
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|  | S0420: 1, H0580: 1,<br>S0045: 1, H0619: 1,<br>H0437: 1, S0222: 1,<br>T0039: 1, H0013: 1,<br>H0599: 1, H0253: 1,<br>S0010: 1, H0421: 1,<br>L0738: 1, H0544: 1,<br>H0546: 1, H0041: 1,<br>H0050: 1, H0373: 1,<br>H0083: 1, H0039: 1,<br>H0622: 1, H0031: 1,<br>H0673: 1, S0366: 1,<br>H0135: 1, H0038: 1,<br>H0551: 1, H0412: 1,<br>H0056: 1, T0041: 1,<br>H0334: 1, H0560: 1,<br>H0509: 1, H0633: 1,<br>S0142: 1, S0002: 1,<br>L0770: 1, L0769: 1,<br>L0646: 1, L0374: 1,<br>L0764: 1, L0771: 1,<br>L0381: 1, L0774: 1,<br>L0775: 1, L0666: 1,<br>L0663: 1, L0664: 1,<br>H0701: 1, S0374: 1,<br>H0519: 1, H0689: 1,<br>H0682: 1, H0659: 1,<br>H0658: 1, H0539: 1,<br>S0152: 1, S0332: 1,<br>H0696: 1, H0134: 1, |  |
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|---------|---------|-----|---------|------|--------------------------------------|--|----------|------------------------------|--|
| HE2PS15 | 1010525 | 427 | 3 - 236 | 2602 | Gly-1 to Asp-8,<br>Asp-62 to Ala-67. | S0406: 1, L0754: 1,<br>L0747: 1, L0750: 1,<br>L0786: 1, L0759: 1,<br>S0260: 1, S0026: 1,<br>H0542: 1, H0543: 1,<br>H0422: 1 and S0452: 1.<br>AR104: 72, AR060:<br>48, AR089: 29, AR055:<br>25, AR096: 16, AR061:<br>10<br>L0755: 9, L0757: 8,<br>L0519: 6, L0748: 6,<br>L0763: 5, L0774: 5,<br>L0779: 5, H0657: 4,<br>S0222: 4, L0471: 4,<br>L0766: 4, H0670: 4,<br>L0588: 4, S0408: 3,<br>S0438: 3, L0520: 3,<br>L0769: 3, S0374: 3,<br>H0352: 3, H0686: 2,<br>H0341: 2, S0444: 2,<br>S0360: 2, S0046: 2,<br>H0261: 2, H0333: 2,<br>L0622: 2, H0494: 2,<br>S0422: 2, L0767: 2,<br>L0768: 2, L0775: 2,<br>L0809: 2, H0659: 2,<br>S0328: 2, H0696: 2,<br>S0406: 2, L0747: 2,<br>L0750: 2, L0731: 2, | 14q32.33 | 144120,<br>147020,<br>147110 |  |
|---------|---------|-----|---------|------|--------------------------------------|--|----------|------------------------------|--|



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| H0667: 2, H0542: 2,<br>H0171: 1, S0114: 1,<br>H0656: 1, S0116: 1,<br>S0358: 1, S0410: 1,<br>H0580: 1, S0007: 1,<br>S0045: 1, H0370: 1,<br>H0357: 1, H0438: 1,<br>L0623: 1, H0486: 1,<br>T0114: 1, T0109: 1,<br>H0250: 1, H0098: 1,<br>H0036: 1, H0004: 1,<br>S0010: 1, H0318: 1,<br>S0049: 1, H0052: 1,<br>L0738: 1, H0572: 1,<br>H0562: 1, H0082: 1,<br>H0051: 1, S0048: 1,<br>S0388: 1, H0083: 1,<br>L0044: 1, H0687: 1,<br>H0428: 1, H0031: 1,<br>H0617: 1, S0364: 1,<br>H0708: 1, S0036: 1,<br>H0412: 1, H0413: 1,<br>S0466: 1, H0131: 1,<br>S0142: 1, L0770: 1,<br>L0373: 1, L0372: 1,<br>L0374: 1, L0764: 1,<br>L0375: 1, L0806: 1,<br>L0657: 1, L0512: 1,<br>L0659: 1, L0540: 1,<br>L0542: 1, L0526: 1, |
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|---------|---------|-----|------------|------|---|--|--|--|-----------|--|--|
|         |         |     |            |      |   |  |  | L0783: 1, L0663: 1,<br>S0216: 1, L0565: 1,<br>S0126: 1, H0682: 1,<br>H0684: 1, H0658: 1,<br>H0648: 1, H0672: 1,<br>H0651: 1, S0378: 1,<br>S0380: 1, H0710: 1,<br>S0152: 1, H0214: 1,<br>H0576: 1, L0745: 1,<br>L0753: 1, L0608: 1,<br>L0594: 1, S0194: 1,<br>S0276: 1, H0543: 1,<br>H0423: 1 and S0424: 1. |           |  |  |
| HTTKH22 | 1010596 | 428 | 266 - 1396 | 2603 | Ser-42 to Pro-49,<br>Asp-86 to Gly-92,<br>Lys-97 to Glu-109.                          |  |  | H0670: 4, H0616: 3,<br>L0439: 3, L0758: 3,<br>S0354: 2, H0038: 2,<br>S0116: 1, H0402: 1,<br>H0637: 1, S0474: 1,<br>H0644: 1, H0673: 1,<br>S0366: 1, H0634: 1,<br>L0351: 1, L0638: 1,<br>L0764: 1, L0766: 1,<br>L0803: 1, L0775: 1,<br>L0805: 1, L0792: 1,<br>L0666: 1, H0520: 1,<br>L0780: 1 and H0542: 1. |           |  |  |
| HNOJG33 | 1010698 | 429 | 1209 - 490 | 2604 | Arg-1 to Pro-15,<br>Ser-146 to Arg-155,<br>Leu-168 to Asp-174,<br>Lys-181 to Thr-186, |  |  | S0040: 3, L0748: 3,<br>S0356: 2, S0358: 2,<br>S0360: 2, H0416: 2,<br>L0752: 2, H0624: 1,   | 12q13-q14 | 107777,<br>123829,<br>123940,<br>139350, |  |



|         |         |     |                |      |   |  |  |  |
|---------|---------|-----|----------------|------|---|--|--|--|
| HPDVK48 | 1011090 | 430 | 1085 -<br>1630 | 2605 | Lys-14 to Ala-21,<br>Ser-23 to Lys-31,<br>Glu-38 to Gln-47,<br>Arg-72 to Leu-78,<br>Gln-87 to Asn-94,<br>Ser-110 to Lys-118,<br>Glu-172 to Lys-182. | H0265: 1, H0556: 1,<br>S0116: 1, H0255: 1,<br>S0376: 1, S0278: 1,<br>H0575: 1, H0251: 1,<br>L0471: 1, H0373: 1,<br>S0051: 1, H0356: 1,<br>H0687: 1, H0288: 1,<br>H0252: 1, H0135: 1,<br>H0634: 1, H0551: 1,<br>S0210: 1, L0438: 1,<br>H0658: 1, H0666: 1,<br>S0330: 1, S3014: 1,<br>L0744: 1, L0439: 1,<br>L0745: 1, S0260: 1,<br>H0595: 1 and S0196: 1. | 139350,<br>147570,<br>148040,<br>148041,<br>148043,<br>148070,<br>181430,<br>231550,<br>252940,<br>264700,<br>600194,<br>600231,<br>600536,<br>600808,<br>600956,<br>601284,<br>601769,<br>601769,<br>601928,<br>602116,<br>602153 |  |
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|---------|---------|-----|----------|------|--|--|-----------|---|
| HNORJ10 | 1011186 | 431 | 3 - 1628 | 2606 | <p>Asn-42 to Pro-48,<br/>Glu-81 to Lys-86,<br/>Val-94 to Thr-99,<br/>Lys-105 to Asp-111,<br/>Phe-129 to Glu-142,<br/>Ser-154 to Gln-160,<br/>Glu-173 to Ala-182,<br/>Gln-209 to Glu-234,<br/>Asp-259 to Asp-272,<br/>Ser-303 to Pro-311,<br/>Thr-321 to Asn-329,<br/>Ala-335 to Glu-349,<br/>Thr-371 to Gly-389,<br/>Gln-395 to Asn-405,<br/>Thr-415 to Asn-423,<br/>Asn-431 to Ser-443,<br/>Lys-475 to Gln-484,<br/>Ser-502 to Gly-507,<br/>Ile-522 to Asn-527.</p> | <p>H0352: 1.<br/>S0003: 17, H0551: 11,<br/>L0483: 9, H0547: 9,<br/>S0212: 7, S0152: 7,<br/>H0521: 7, H0423: 7,<br/>L0766: 6, L0666: 6,<br/>S0214: 5, S0126: 5,<br/>H0543: 5, S0420: 4,<br/>S0360: 4, H0411: 4,<br/>H0032: 4, H0598: 4,<br/>S0422: 4, L0649: 4,<br/>L0665: 4, L0757: 4,<br/>H0657: 3, S0376: 3,<br/>L0717: 3, H0574: 3,<br/>H0486: 3, H0069: 3,<br/>H0427: 3, H0581: 3,<br/>H0046: 3, H0457: 3,<br/>H0271: 3, H0622: 3,<br/>H0494: 3, L0667: 3,<br/>L0655: 3, L0659: 3,<br/>H0519: 3, H0672: 3,<br/>H0710: 3, L0754: 3,<br/>L0759: 3, L0593: 3,<br/>L0601: 3, H0422: 3,<br/>H0218: 2, S0040: 2,<br/>H0713: 2, H0717: 2,<br/>H0650: 2, H0656: 2,<br/>S0356: 2, S0132: 2,<br/>S0222: 2, H0333: 2,<br/>H0009: 2, L0157: 2,</p> | 14q21-q24 | <p>107970,<br/>115650,<br/>182600,<br/>232700,<br/>602086,<br/>602091,<br/>602616</p> |
|---------|---------|-----|----------|------|--|--|-----------|---|







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|  |  |  |  | L0471: 1, H0014: 1,<br>H0687: 1, S0312: 1,<br>S0250: 1, H0328: 1,<br>H0615: 1, H0428: 1,<br>H0039: 1, T0023: 1,<br>H0553: 1, H0644: 1,<br>H0628: 1, H0169: 1,<br>H0674: 1, H0090: 1,<br>H0038: 1, H0616: 1,<br>H0264: 1, H0488: 1,<br>H0433: 1, H0623: 1,<br>L0564: 1, L0370: 1,<br>L0065: 1, S0150: 1,<br>H0647: 1, S0142: 1,<br>S0208: 1, S0210: 1,<br>L0598: 1, L0369: 1,<br>L0637: 1, L0772: 1,<br>L0773: 1, L0648: 1,<br>L0803: 1, L0774: 1,<br>L0653: 1, L0654: 1,<br>L0527: 1, L0635: 1,<br>L0517: 1, L0530: 1,<br>L0368: 1, S0052: 1,<br>S0428: 1, H0691: 1,<br>H0690: 1, H0682: 1,<br>H0684: 1, H0659: 1,<br>H0670: 1, S0330: 1,<br>H0518: 1, S0350: 1,<br>H0727: 1, S0390: 1,<br>S0028: 1, L0740: 1, |  |  |  |  |
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|---------|---------|-----|-----------|------|--|--|--|--|--|--|
|         |         |     |           |      |  |  | L0751: 1, L0779: 1,<br>L0777: 1, L0780: 1,<br>L0753: 1, L0731: 1,<br>H0445: 1, H0595: 1,<br>S0434: 1, S0436: 1,<br>L0591: 1, S0011: 1,<br>H0668: 1, S0196: 1,<br>L0469: 1, S0424: 1 and<br>S0458: 1. |  |  |  |
| HPDRG92 | 1011209 | 432 | 1 - 291   | 2607 |  | Pro-51 to Phe-57,<br>Ser-87 to Thr-94.   | H0658: 3, L0748: 3,<br>H0052: 1 and L0741: 1.  |  |  |  |
| HOFMQ81 | 1011303 | 433 | 2 - 544   | 2608 |  | His-1 to Gly-12,<br>Ser-27 to Ser-37,<br>Pro-59 to Ser-68,<br>Glu-94 to Ala-102,<br>Ile-129 to Ser-143,<br>Pro-145 to Pro-150.     | AR033: 2, AR089: 2,<br>AR039: 2, AR061: 2,<br>AR055: 1, AR096: 1,<br>AR060: 1, AR104: 1,<br>AR053: 0<br>H0415: 2   |  |  |  |
| HOFNF27 | 1011315 | 434 | 3 - 680   | 2609 |  | Pro-10 to Lys-26,<br>Asn-44 to Tyr-53,<br>Arg-104 to Lys-114,<br>Arg-121 to Ala-134,<br>Gly-155 to Thr-177,<br>Gln-201 to Ser-206. | AR053: 3, AR089: 2,<br>AR096: 1, AR060: 1,<br>AR055: 1, AR104: 1,<br>AR033: 1, AR039: 1,<br>AR061: 0<br>H0415: 3, H0539: 2,<br>H0355: 1 and H0375: 1.  |  |  |  |
| HOFND52 | 1011316 | 435 | 126 - 542 | 2610 |  | Pro-9 to Arg-15, --<br>Ala-17 to Thr-26,<br>Pro-39 to Lys-45,<br>Asp-54 to Ala-61,<br>Leu-86 to Gly-91,<br>Phe-99 to Thr-106.      | AR096: 1, AR060: 1,<br>AR061: 1, AR033: 1,<br>AR089: 1, AR039: 1,<br>AR053: 0, AR055: 0,<br>AR104: 0<br>H0415: 2   |  |  |  |



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|---------|---------|-----|-----------|------|---|--|---------|---|
| HOFNL96 | 1011321 | 436 | 3 - 575   | 2611 | Pro-3 to Ala-17,<br>Asn-56 to Asp-62.   | H0415: 1   |         |   |
| HOFNF53 | 1011332 | 437 | 2 - 1183  | 2612 | Pro-26 to Arg-32,<br>Gly-68 to Glu-75;<br>Cys-111 to Asp-116.   | AR052: 2, AR053: 1,<br>AR089: 1, AR096: 1,<br>AR055: 1, AR039: 1,<br>AR060: 1, AR033: 1,<br>AR061: 1, AR104: 0<br>H0415: 2   |         |   |
| HOFMU61 | 1011360 | 438 | 62 - 1249 | 2613 | Ala-39 to Thr-44,<br>Thr-171 to Lys-180.  | AR052: 1, AR096: 1,<br>AR089: 1, AR060: 1,<br>AR033: 1, AR053: 0,<br>AR061: 0, AR104: 0,<br>AR039: 0, AR055: 0<br>H0415: 4   |         |   |
| HOFOF35 | 1011499 | 439 | 1 - 639   | 2614 | Ser-13 to Glu-26,<br>Ser-48 to Val-55,<br>Lys-85 to Thr-91,<br>Asp-115 to Asn-126,<br>Asp-169 to Lys-175. | H0415: 2   |         |   |
| HULFJ37 | 1011537 | 440 | 915 - 364 | 2615 |   | H0620: 11, H0683: 10,<br>H0483: 7, H0046: 7,<br>H0687: 6, S0360: 4,<br>H0012: 4, H0428: 4,<br>L0471: 3, L0665: 3,<br>H0520: 3, H0670: 3,<br>H0672: 3, L0750: 3,<br>H0624: 2, H0662: 2,<br>H0333: 2, H0013: 2,<br>H0530: 2, H0024: 2, | 11p11.2 | 133701,<br>168500,<br>171650,<br>176930,<br>176930,<br>600623,<br>600811,<br>600958 |



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| H0594: 2, L0381: 2,<br>H0144: 2, H0547: 2,<br>H0435: 2, L0593: 2,<br>L0601: 2, H0352: 2,<br>H0294: 1, H0341: 1,<br>H0661: 1, H0664: 1,<br>H0240: 1, S0354: 1,<br>S0358: 1, S0376: 1,<br>H0675: 1, S0007: 1,<br>S0046: 1, H0369: 1,<br>H0370: 1, H0587: 1,<br>H0497: 1, H0642: 1,<br>H0575: 1, S0049: 1,<br>H0204: 1, H0596: 1,<br>H0178: 1, H0011: 1,<br>H0266: 1, H0290: 1,<br>T0006: 1, H0424: 1,<br>S0364: 1, H0616: 1,<br>H0087: 1, H0412: 1,<br>H0413: 1, H0100: 1,<br>H0647: 1, H0652: 1,<br>S0210: 1, L0369: 1,<br>L0769: 1, L0373: 1,<br>L0771: 1, L0364: 1,<br>L0649: 1, L0775: 1,<br>L0375: 1, L0651: 1,<br>L0776: 1, L0659: 1,<br>L0517: 1, L0783: 1,<br>L0382: 1, L0809: 1,<br>L0519: 1, L0663: 1, |  |
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|---------|---------|-----|------------|------|--|--|---------|--|--|
| HOFME75 | 1011607 | 441 | 2 - 1024   | 2616 | Arg-1 to Gly-7.  | S0053: 1, H0519: 1,<br>H0658: 1, H0660: 1,<br>H0666: 1, S0027: 1,<br>L0743: 1, L0740: 1,<br>L0747: 1, L0749: 1,<br>L0779: 1, L0777: 1,<br>L0752: 1, L0753: 1,<br>L0757: 1, L0759: 1,<br>H0445: 1, H0595: 1 and<br>L0595: 1.  |         |  |  |
|         |         |     |            |      |  | H0415: 5   | 11q13.5 | 133780,<br>266150,<br>276903,<br>276903,<br>276903 |  |
| HOPKO74 | 1011608 | 442 | 136 - 1482 | 2617 | Arg-6 to Gly-13,<br>Gln-132 to Glu-137,<br>Arg-179 to Ala-200,<br>Ala-209 to Lys-215,<br>Glu-218 to Asp-227,<br>Pro-239 to Lys-244,<br>Tyr-276 to Lys-283,<br>Ile-361 to Asp-367,<br>Met-371 to Asp-<br>376,<br>Asp-391 to Lys-411,<br>Pro-440 to Leu-449. | L0747: 55, H0551: 25,<br>H0135: 24, S0126: 20,<br>H0619: 14, L0750: 14,<br>S0418: 12, S0360: 12,<br>H0547: 12, S0028: 12,<br>L0754: 12, L0659: 11,<br>H0123: 10, L0665: 9,<br>H0693: 9, S3014: 9,<br>S0027: 9, S0040: 8,<br>L0654: 8, L0595: 8,<br>H0050: 7, L0363: 7,<br>L0666: 7, L0601: 7,<br>S0212: 6, L0717: 6,<br>H0599: 6, H0081: 6,<br>H0012: 6, H0024: 6, | 11q13.5 | 133780,<br>266150,<br>276903,<br>276903,<br>276903 |  |















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| HCBBA51 | 1011755 | 443 | 57 - 266 | 2618 | Pro-11 to Phe-16,<br>Thr-48 to Ser-60. | L0651: 1, L0508: 1,<br>L0656: 1, L0782: 1,<br>L0783: 1, L0383: 1,<br>L0519: 1, L0545: 1,<br>L0543: 1, L5623: 1,<br>L0793: 1, S0006: 1,<br>H0144: 1, H0682: 1,<br>H0435: 1, H0660: 1,<br>H0539: 1, H0522: 1,<br>H0694: 1, L0439: 1,<br>L0758: 1, L0362: 1,<br>S0011: 1, H0668: 1,<br>H0665: 1, H0667: 1,<br>S0194: 1, S0196: 1,<br>H0542: 1, S0042: 1 and<br>H0008: 1. |  |  |
|         |         |     |          |      |  | H0659: 16, L0747: 15,<br>S0358: 14, L0005: 13,<br>L0758: 9, S0360: 8,<br>L0775: 8, H0648: 8,<br>H0657: 6, L0731: 6,<br>L0757: 6, H0341: 5,<br>H0412: 5, S0440: 5,<br>H0658: 5, H0710: 5,<br>L0750: 5, L0588: 5,<br>S0007: 4, S0046: 4,<br>H0599: 4, L0520: 4,<br>L0764: 4, L0768: 4,<br>H0170: 3, H0306: 3,<br>H0125: 3, S0408: 3,                                    |  |  |



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|  | H0309: 3, H0039: 3,<br>H0617: 3, H0413: 3,<br>L0809: 3, L0519: 3,<br>S0126: 3, S0406: 3,<br>H0576: 3, H0422: 3,<br>S0134: 2, L0808: 2,<br>S0116: 2, H0661: 2,<br>H0663: 2, H0393: 2,<br>L0394: 2, S0222: 2,<br>H0586: 2, L0622: 2,<br>L0623: 2, H0486: 2,<br>T0109: 2, S0280: 2,<br>H0581: 2, H0596: 2,<br>H0231: 2, S0003: 2,<br>T0006: 2, H0674: 2,<br>H0598: 2, H0100: 2,<br>S0438: 2, H0633: 2,<br>L0772: 2, L0521: 2,<br>L0767: 2, H0144: 2,<br>S0374: 2, H0672: 2,<br>S0328: 2, S0330: 2,<br>S0152: 2, S0032: 2,<br>L0755: 2, L0759: 2,<br>S0031: 2, H0595: 2,<br>S0026: 2, T0002: 1,<br>H0686: 1, H0685: 1,<br>S6024: 1, H0294: 1,<br>T0049: 1, S0282: 1,<br>H0255: 1, H0669: 1,<br>H0664: 1, H0177: 1. |  |  |  |  |
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| S0376: 1, S0444: 1,<br>S0410: 1, S0045: 1,<br>S0132: 1, H0411: 1,<br>S0278: 1, S6022: 1,<br>H0441: 1, H0609: 1,<br>T0039: 1, H0013: 1,<br>H0635: 1, H0042: 1,<br>T0048: 1, H0421: 1,<br>H0173: 1, H0052: 1,<br>H0204: 1, H0597: 1,<br>H0044: 1, H0546: 1,<br>H0046: 1, H0150: 1,<br>H0009: 1, H0023: 1,<br>H0373: 1, L0163: 1,<br>H0201: 1, S0048: 1,<br>S0388: 1, S0051: 1,<br>H0408: 1, H0238: 1,<br>H0622: 1, T0023: 1,<br>H0031: 1, H0606: 1,<br>H0673: 1, H0163: 1,<br>H0040: 1, H0634: 1,<br>H0616: 1, T0069: 1,<br>T0041: 1, H0494: 1,<br>H0646: 1, S0144: 1,<br>S0142: 1, S0344: 1,<br>L0598: 1, L0762: 1,<br>L0763: 1, L0769: 1,<br>L0637: 1, L0761: 1,<br>L0373: 1, L0773: 1,<br>L0522: 1, L0803: 1, |
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|---------|---------|-----|----------|------|---|--|---|--|--|
|         |         |     |          |      |   |  | L0774: 1, L0375: 1,<br>L0653: 1, L0542: 1,<br>L0782: 1, L0783: 1,<br>L0789: 1, S0428: 1,<br>S0053: 1, H0690: 1,<br>H0682: 1, H0670: 1,<br>H0651: 1, S0378: 1,<br>S0380: 1, H0134: 1,<br>H0436: 1, S0027: 1,<br>L0751: 1, S0260: 1,<br>H0445: 1, S0394: 1,<br>S0011: 1, H0653: 1,<br>H0136: 1, S0194: 1 and<br>H0423: 1. |  |  |
| HDHEB13 | 1011773 | 444 | 31 - 972 | 2619 | Gly-1 to Glu-11,<br>Arg-54 to Ser-60,<br>Pro-68 to Gly-78,<br>Pro-92 to Gly-126,<br>Ala-134 to Asn-143,<br>Thr-145 to Gly-162,<br>Gly-173 to Ser-179,<br>Lys-187 to Leu-194,<br>Glu-205 to Ser-213,<br>Ser-283 to Phe-289,<br>Ala-306 to Glu-313. | L0777: 4, L0747: 3,<br>S0007: 1, H0351: 1,<br>H0550: 1, H0013: 1,<br>H0570: 1, H0123: 1,<br>H0019: 1, H0012: 1,<br>H0553: 1, L0794: 1,<br>L0759: 1 and H0352: 1. |   |  |  |
| HDTMG36 | 1011821 | 445 | 3 - 248  | 2620 | Pro-28 to Gln-35,<br>Leu-71 to Pro-77.  |  |   |  |  |
| HVVCJ38 | 1011830 | 446 | 2 - 817  | 2621 | Thr-121 to Asn-126,<br>Ala-134 to Ala-140,<br>Arg-174 to Arg-184,   | L0771: 5, L0439: 5,<br>L0761: 4, L0794: 4,<br>L0809: 4, L0666: 4,  |   |  |  |



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| Ser-194 to Glu-199,<br>Met-208 to Gln-217,<br>Arg-258 to Gly-263. | L0743: 4, L0758: 4,<br>H0661: 3, H0638: 3,<br>H0618: 3, L0770: 3,<br>L0803: 3, L0659: 3,<br>L0790: 3, H0662: 2,<br>H0181: 2, S0144: 2,<br>S0142: 2, L0800: 2,<br>L0663: 2, H0539: 2,<br>L0740: 2, L0750: 2,<br>H0713: 1, H0583: 1,<br>S0212: 1, H0483: 1,<br>H0402: 1, S0418: 1,<br>S0356: 1, S0360: 1,<br>S0222: 1, H0486: 1,<br>T0109: 1, H0250: 1,<br>H0575: 1, H0253: 1,<br>H0052: 1, H0194: 1,<br>H0544: 1, H0546: 1,<br>H0545: 1, H0024: 1,<br>H0355: 1, H0688: 1,<br>H0617: 1, H0124: 1,<br>H0135: 1, H0163: 1,<br>H0413: 1, S0038: 1,<br>T0041: 1, H0509: 1,<br>H0529: 1, L0371: 1,<br>L0769: 1, L0638: 1,<br>L0764: 1, L0648: 1,<br>L0662: 1, L0804: 1,<br>L0775: 1, L0629: 1,<br>L0657: 1, L0656: 1, |  |  |  |  |
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|---------|---------|-----|-----------|------|---|--|--|--|--|--|
|         |         |     |           |      |   |  | L0647: 1, L0791: 1,<br>L0438: 1, H0519: 1,<br>H0435: 1, H0658: 1,<br>H0670: 1, H0672: 1,<br>S0328: 1, H0521: 1,<br>H0436: 1, L0741: 1,<br>L0749: 1, L0779: 1,<br>L0759: 1, H0445: 1,<br>S0398: 1 and H0352: 1.   |  |  |  |
| HPAMY22 | 1011840 | 447 | 1 - 180   | 2622 | Pro-18 to Gln-36,<br>Ser-43 to Ala-57.  |  | H0682: 1   |  |  |  |
| HE9CP86 | 1011847 | 448 | 107 - 727 | 2623 | Arg-13 to Arg-19,<br>Asp-37 to Asp-43,<br>Glu-127 to Asp-132,<br>Asn-152 to Glu-171,<br>Ala-179 to Ala-193. |  | L0748: 18, L0749: 8,<br>L0755: 7, H0686: 4,<br>S0360: 3, H0519: 3,<br>H0659: 3, L0747: 3,<br>L0758: 3, H0341: 2,<br>H0622: 2, H0040: 2,<br>H0616: 2, L0772: 2,<br>L0375: 2, L0754: 2,<br>L0779: 2, H0542: 2,<br>H0294: 1, H0657: 1,<br>H0656: 1, S0116: 1,<br>H0663: 1, H0638: 1,<br>S0376: 1, H0393: 1,<br>H0083: 1, H0030: 1,<br>L0055: 1, H0068: 1,<br>H0591: 1, H0038: 1,<br>H0412: 1, H0100: 1,<br>L0475: 1, S0422: 1,<br>L0763: 1, L0771: 1, |  |  |  |



|         |         |     |          |      |   |  |   |  |  |  |
|---------|---------|-----|----------|------|---|--|---|--|--|--|
|         |         |     |          |      |   |  | L0767: 1, L0768: 1,<br>L0784: 1, L0776: 1,<br>L0633: 1, L0783: 1,<br>L0665: 1, H0144: 1,<br>H0682: 1, S0378: 1,<br>H0627: 1, L0752: 1,<br>L0731: 1, S0026: 1,<br>H0665: 1, S0242: 1 and<br>H0543: 1.  |  |  |  |
| HPDOU46 | 1011883 | 449 | 24 - 692 | 2624 |   |  | H0658: 2, L0750: 2,<br>L0806: 1, L0790: 1 and<br>L0779: 1.  |  |  |  |
| HFCDW73 | 1011901 | 450 | 3 - 425  | 2625 |   |  | H0575: 1 and H0009:<br>1.   |  |  |  |
| HOVEB13 | 1011919 | 451 | 21 - 905 | 2626 | Val-7 to Ser-12,<br>Leu-79 to Asn-87,<br>Lys-120 to Ala-125, AR052: 3, AR060: 3,<br>Ala-166 to Arg-171, AR053: 2, AR061: 2,<br>Lys-208 to Phe-217, AR039: 1, AR104: 0<br>Gln-234 to Pro-241,<br>Asp-285 to Gln-290. |  | AR033: 6, AR089: 5,<br>AR096: 4, AR055: 3,<br>AR052: 3, AR060: 3,<br>AR053: 2, AR061: 2,<br>AR039: 1, AR104: 0<br>L0779: 4, H0428: 3,<br>L0773: 2, L0662: 2,<br>L0659: 2, L0602: 2,<br>L0777: 2, L0596: 2,<br>L0608: 2, H0170: 1,<br>H0580: 1, S0045: 1,<br>T0048: 1, H0052: 1,<br>L0471: 1, H0628: 1,<br>L0770: 1, L0761: 1,<br>L0805: 1, L0653: 1,<br>L0657: 1, L0512: 1, |  |  |  |



|         |         |     |           |      |   |  |  |
|---------|---------|-----|-----------|------|---|--|--|
| HPAMS93 | 1011948 | 452 | 74 - 1114 | 2627 | H0682: 1, H0672: 1,<br>L0748: 1, L0740: 1,<br>L0749: 1, L0757: 1,<br>S0031: 1, H0543: 1 and<br>H0677: 1.<br><br>L0754: 8, L0766: 6,<br>L0439: 6, S0414: 4,<br>L0758: 4, S0360: 3,<br>L0803: 3, L0666: 3,<br>L0756: 3, L0731: 3,<br>S0218: 2, H0676: 2,<br>H0251: 2, H0457: 2,<br>H0083: 2, H0038: 2,<br>H0616: 2, L0770: 2,<br>L0775: 2, H0144: 2,<br>H0682: 2, H0436: 2,<br>L0752: 2, L0485: 2,<br>L0594: 2, H0624: 1,<br>S0430: 1, H0657: 1,<br>H0341: 1, S0358: 1,<br>H0411: 1, H0431: 1,<br>T0039: 1, H0013: 1,<br>L0021: 1, H0194: 1,<br>H0050: 1, H0020: 1,<br>H0051: 1, H0375: 1,<br>H0594: 1, S0003: 1,<br>H0272: 1, S0386: 1,<br>H0494: 1, S0438: 1,<br>H0652: 1, S0422: 1,<br>H0529: 1, L0765: 1, |  |  |
|---------|---------|-----|-----------|------|---|--|--|



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|---------|---------|-----|------------|------|--|---|--|------------------------------|--|--|
|         |         |     |            |      |  |   | L0771: 1, L0521: 1,<br>L0804: 1, L0774: 1,<br>L0651: 1, L0776: 1,<br>L0655: 1, L0659: 1,<br>L0809: 1, L0647: 1,<br>L0789: 1, L0790: 1,<br>L0663: 1, L0664: 1,<br>L0665: 1, S0374: 1,<br>L0438: 1, H0519: 1,<br>S0188: 1, H0478: 1,<br>H0626: 1, S0028: 1,<br>L0779: 1, L0777: 1,<br>L0780: 1, L0759: 1,<br>S0031: 1, H0445: 1 and<br>S0026: 1. |                              |  |  |
| HCRBN71 | 1011966 | 453 | 1 - 420    | 2628 |  |   | L0776: 6, L0766: 5,<br>L0777: 3, L0758: 3,<br>L0755: 2, H0327: 1,<br>L0768: 1, L0805: 1,<br>L0655: 1, L0788: 1,<br>H0648: 1, H0672: 1,<br>S0406: 1, L0747: 1,<br>L0752: 1, L0757: 1 and<br>S0196: 1.   |                              |  |  |
| HCRNC60 | 1012005 | 454 | 637 - 1302 | 2629 | Pro-16 to Asp-25,<br>Arg-44 to Glu-50,<br>Ser-63 to Arg-69,<br>Glu-108 to Arg-115,<br>Lys-122 to Gly-136,<br>Arg-143 to Met-151, | L0471: 11, H0251: 9,<br>L0163: 7, H0599: 5,<br>H0295: 4, H0373: 4,<br>S0210: 4, S0126: 3,<br>S0356: 2, S0358: 2,<br>H0619: 2, H0012: 2, | 15q22.1  | 151670,<br>191010,<br>601780 |  |  |



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| Asp-167 to Glu-173,<br>Asp-185 to Glu-194,<br>Thr-206 to Asp-213. | H0628: 2, S0364: 2,<br>H0551: 2, H0519: 2,<br>S0026: 2, H0170: 1,<br>T0049: 1, S0134: 1,<br>H0656: 1, H0662: 1,<br>S0418: 1, S0420: 1,<br>S0354: 1, S0360: 1,<br>T0008: 1, H0411: 1,<br>H0431: 1, H0432: 1,<br>H0592: 1, S0005: 1,<br>H0574: 1, H0270: 1,<br>T0039: 1, H0013: 1,<br>H0002: 1, H0036: 1,<br>S0010: 1, S0474: 1,<br>H0196: 1, T0115: 1,<br>H0597: 1, H0545: 1,<br>H0050: 1, H0024: 1,<br>S0362: 1, H0200: 1,<br>H0266: 1, S0022: 1,<br>H0252: 1, H0039: 1,<br>H0644: 1, H0032: 1,<br>S0366: 1, H0090: 1,<br>H0591: 1, T0041: 1,<br>T0042: 1, H0509: 1,<br>S0374: 1, H0520: 1,<br>H0670: 1, H0651: 1,<br>H0539: 1, S0380: 1,<br>S0044: 1, S0118: 1,<br>S0028: 1, L0748: 1,<br>L0757: 1, L0588: 1, |  |  |  |  |  |
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|---------|---------|-----|-----------|------|---|--|--|---------|---|--|
|         |         |     |           |      |   |  | S0011: 1, H0653: 1,<br>H0665: 1, S0242: 1 and<br>H0506: 1.   |         |   |  |
| HSPSJ24 | 1012064 | 455 | 284 - 925 | 2630 | Pro-83 to Gln-90,<br>Ala-123 to Gly-131,<br>Glu-174 to Pro-183. |  | S0358: 2, S0360: 2,<br>H0251: 2, H0622: 2,<br>S0144: 2, L0659: 2,<br>L0751: 2, L0777: 2,<br>H0265: 1, S0134: 1,<br>H0657: 1, H0486: 1,<br>H0575: 1, S0010: 1,<br>H0581: 1, H0052: 1,<br>H0085: 1, H0266: 1,<br>H0687: 1, H0644: 1,<br>H0617: 1, L0662: 1,<br>L0766: 1, L0549: 1,<br>L0774: 1, L0775: 1,<br>L0806: 1, L0657: 1,<br>L0382: 1, H0683: 1,<br>H0522: 1, H0555: 1,<br>H0576: 1, L0754: 1,<br>L0749: 1, L0758: 1,<br>L0599: 1 and S0446: 1. | 14q11.2 | 182600,<br>186880,<br>190195,<br>190195,<br>222700,<br>600243,<br>602279,<br>602279 |  |
| HPCPB22 | 1012076 | 456 | 3 - 554   | 2631 | Arg-88 to Lys-93,<br>Tyr-101 to Gly-107,<br>Arg-169 to Pro-184. |  | H0659: 2 and L0378:<br>1.  |         |   |  |
| HOVDZ22 | 1012136 | 457 | 2 - 169   | 2632 | Tyr-1 to Gly-13.  |  | H0529: 7, L0766: 6,<br>L0809: 6, L0777: 5,<br>H0428: 3, H0656: 2,<br>H0013: 2, H0620: 2,<br>L0806: 2, L0665: 2,  |         |   |  |



|         |         |     |         |      |                  |  |  |
|---------|---------|-----|---------|------|------------------|--|--|
| HBZSK53 | 1012240 | 458 | 2 - 721 | 2633 | Pro-6 to Gln-11. | H0547: 2, L0748: 2,<br>L0747: 2, L0756: 2,<br>L0601: 2, H0484: 1,<br>H0192: 1, S0420: 1,<br>S0358: 1, H0575: 1,<br>H0581: 1, H0046: 1,<br>H0012: 1, T0010: 1,<br>H0266: 1, H0622: 1,<br>H0165: 1, H0673: 1,<br>L0456: 1, H0068: 1,<br>H0135: 1, H0087: 1,<br>H0264: 1, H0412: 1,<br>H0560: 1, L0763: 1,<br>L0770: 1, L0771: 1,<br>L0649: 1, L0561: 1,<br>L0375: 1, L0805: 1,<br>L0776: 1, L0518: 1,<br>L0783: 1, L0666: 1,<br>L0663: 1, H0520: 1,<br>H0519: 1, S0126: 1,<br>H0659: 1, H0672: 1,<br>H0539: 1, H0436: 1,<br>S3014: 1, L0741: 1,<br>L0749: 1, L0750: 1,<br>L0779: 1, L0731: 1,<br>L0589: 1, L0581: 1,<br>L0608: 1 and S0011: 1. | H0584: 59, S0278: 16,<br>S0444: 10, L0775: 10,<br>L0809: 10, H0545: 9, |
|---------|---------|-----|---------|------|------------------|--|--|



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| S0144: 9, H0670: 9,<br>S0408: 8, S0410: 7,<br>L0761: 7, L0766: 7,<br>L0731: 7, L0757: 7,<br>H0617: 6, L0774: 6,<br>H0656: 5, H0255: 5,<br>S0358: 5, H0559: 5,<br>H0620: 5, L0772: 5,<br>S0328: 5, L0747: 5,<br>H0341: 4, H0546: 4,<br>H0059: 4, L0800: 4,<br>L0754: 4, L0758: 4,<br>H0638: 3, H0580: 3,<br>H0250: 3, S0440: 3,<br>H0652: 3, S0142: 3,<br>L0764: 3, L0653: 3,<br>L0783: 3, S0374: 3,<br>H0522: 3, H0624: 2,<br>H0657: 2, H0402: 2,<br>H0637: 2, H0586: 2,<br>H0486: 2, H0581: 2,<br>L0763: 2, L0770: 2,<br>L0374: 2, L0771: 2,<br>L0773: 2, L0776: 2,<br>L0790: 2, S0052: 2,<br>H0684: 2, S0406: 2,<br>S3014: 2, S0027: 2,<br>L0779: 2, L0777: 2,<br>H0445: 2, L0601: 2,<br>H0167: 1, H0716: 1, |  |  |  |  |  |
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|---------|---------|-----|-----------|------|---|--|------|--|--|
| HCONM62 | 1012454 | 460 | 20 - 1306 | 2635 | Leu-38 to Gly-59,<br>Pro-62 to Thr-75,<br>Met-83 to Val-90,<br>Thr-94 to Ser-105,<br>Pro-109 to Glu-125,<br>Phe-134 to Ser-139,<br>Ile-141 to Lys-162,<br>Cys-166 to Pro-180,<br>Leu-202 to Pro-207,<br>Ile-248 to Asn-253. | S0114: 2, H0123: 2,<br>H0494: 2, H0445: 2,<br>H0663: 1, H0455: 1,<br>H0036: 1, H0457: 1,<br>H0050: 1, H0039: 1,<br>H0212: 1, H0433: 1,<br>L0766: 1, S0206: 1 and<br>L0749: 1.  |      |  | 126650,<br>126650,<br>164860,<br>180105,<br>222800,<br>246900,<br>274600,<br>274600,<br>602081 |
|         |         |     |           |      |   | H0521: 181, L0748:<br>11, H0551: 10, H0617:<br>8, H0046: 7, L0731: 7,<br>H0623: 6, L0663: 6,<br>H0547: 6, H0265: 5,<br>S0418: 5, H0009: 5,<br>H0553: 5, H0670: 5,<br>L0740: 5, L0759: 5,<br>H0556: 4, S0376: 4,<br>S0046: 4, H0266: 4,<br>H0135: 4, S0344: 4,<br>L0665: 4, S0374: 4,<br>H0689: 4, H0435: 4,<br>H0658: 4, S3014: 4,<br>S0206: 4, L0596: 4,<br>H0543: 4, S0212: 3,<br>H0483: 3, S0410: 3,<br>S0132: 3, H0592: 3,<br>H0012: 3, H0620: 3,<br>H0039: 3, H0488: 3, | 7q31 |  |  |



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|  |  | L0372: 3, L0764: 3,<br>L0666: 3, H0519: 3,<br>S0027: 3, S0028: 3,<br>L0439: 3, L0750: 3,<br>L0777: 3, H0665: 3,<br>H0656: 2, H0638: 2,<br>L0562: 2, L0539: 2,<br>S0360: 2, H0208: 2,<br>S0045: 2, L0717: 2,<br>H0549: 2, H0586: 2,<br>H0156: 2, H0052: 2,<br>H0545: 2, H0024: 2,<br>H0424: 2, H0213: 2,<br>H0030: 2, H0087: 2,<br>H0100: 2, T0042: 2,<br>H0494: 2, H0560: 2,<br>H0561: 2, S0440: 2,<br>L0369: 2, L0640: 2,<br>L0761: 2, L0646: 2,<br>L0659: 2, L0540: 2,<br>L0382: 2, L0809: 2,<br>L0664: 2, L0438: 2,<br>H0593: 2, H0648: 2,<br>H0555: 2, L0757: 2,<br>L0758: 2, S0434: 2,<br>L0595: 2, S0192: 2,<br>H0423: 2, H0422: 2,<br>H0677: 2, H0624: 1,<br>S0342: 1, S0218: 1,<br>H0650: 1, H0657: 1, |  |  |
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|---------|---------|-----|---------|------|--|---|----------|--|
| HOGEU69 | 1012459 | 461 | 2 - 691 | 2636 | Arg-1 to Ala-11,<br>Ser-118 to Gln-126,<br>Leu-200 to Thr-207,<br>Lys-213 to Ala-218,<br>Glu-225 to Thr-230. | S0422: 1, S0002: 1,<br>L0598: 1, H0529: 1,<br>L0641: 1, L0374: 1,<br>L0645: 1, L0648: 1,<br>L0650: 1, L0375: 1,<br>L0378: 1, L0806: 1,<br>L0653: 1, L0776: 1,<br>L0655: 1, L0661: 1,<br>L0634: 1, L0636: 1,<br>L0517: 1, L0518: 1,<br>L0384: 1, L0647: 1,<br>L0789: 1, L0791: 1,<br>L0792: 1, H0144: 1,<br>H0701: 1, S0126: 1,<br>H0690: 1, H0659: 1,<br>H0672: 1, H0539: 1,<br>S0378: 1, H0518: 1,<br>S0152: 1, S0044: 1,<br>H0576: 1, H0631: 1,<br>S0032: 1, L0741: 1,<br>L0743: 1, L0745: 1,<br>L0779: 1, L0752: 1,<br>L0592: 1, H0668: 1 and<br>H0542: 1. | 5q22-q23 | 121050,<br>126150,<br>159000,<br>175100,<br>175100,<br>175100, |
|---------|---------|-----|---------|------|--|---|----------|--|



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| L0529: 3, H0521: 3,<br>H0318: 2, H0178: 2,<br>H0553: 2, H0641: 2,<br>L0763: 2, L0770: 2,<br>L0769: 2, L0662: 2,<br>L0651: 2, L0659: 2,<br>L0519: 2, L0750: 2,<br>S0434: 2, H0624: 1,<br>T0002: 1, H0650: 1,<br>S0212: 1, H0638: 1,<br>S0358: 1, S0444: 1,<br>H0637: 1, S0132: 1,<br>H0340: 1, H0343: 1,<br>H0413: 1, H0360: 1,<br>E0311: 1, L0704: 1,<br>L0328: 1, L0329: 1,<br>L0650: 1, L0774: 1,<br>L0806: 1, L0657: 1,<br>L0650: 1, L0774: 1,<br>L0806: 1, L0657: 1,<br>L0650: 1, L0774: 1,<br>L0806: 1, L0657: 1,<br>L0650: 1, L0774: 1,<br>L0806: 1, L0657: 1,<br>L0809: 1, L0664: 1,<br>L0665: 1, H0144: 1,<br>H0547: 1, H0682: 1,<br>H0435: 1, H0648: 1,<br>H0539: 1, S0380: 1,<br>S0152: 1, H0555: 1, | 175100,<br>175100,<br>175100,<br>179095,<br>192974,<br>192974,<br>601596 |
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|---------|---------|-----|-----------|------|---------------------------------------|--|---|--------|-------------------------------|--|
|         |         |     |           |      |                                       |  | L0749: 1, L0758: 1,<br>H0445: 1, L0595: 1 and<br>S0192: 1.  |        |                               |  |
| HVVD93  | 1012469 | 462 | 2 - 829   | 2637 | Gln-3 to Cys-12,<br>Thr-19 to Thr-25. |  | L0758: 5, L0769: 4,<br>L0766: 3, L0809: 3,<br>L0774: 2, L0790: 2,<br>L0663: 2, L0439: 2,<br>L0752: 2, S0218: 1,<br>H0583: 1, S0442: 1,<br>S0622: 1, H0441: 1,<br>H0574: 1, H0150: 1,<br>S0388: 1, S0364: 1,<br>H0743: 1, L0369: 1,<br>L0770: 1, L0638: 1,<br>L0644: 1, L0764: 1,<br>L0648: 1, L0662: 1,<br>L0794: 1, L0803: 1,<br>L0636: 1, L0368: 1,<br>L0666: 1, L0664: 1,<br>L0565: 1, L0438: 1,<br>H0682: 1, H0672: 1,<br>L0741: 1, L0743: 1,<br>L0748: 1, L0751: 1,<br>L0754: 1, L0747: 1,<br>L0749: 1, L0777: 1,<br>L0759: 1, S0434: 1 and<br>L0592: 1. |        |                               |  |
| HCOMV86 | 1012482 | 463 | 313 - 834 | 2638 |                                       |  | H0521: 91, H0580: 23,<br>H0522: 22, H0445: 14,<br>H0638: 12, H0656: 11,   | 6p21.3 | 106300,<br>108800,<br>120290, |  |



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|         |         |     |          |      |                                       |  |      |        |
|---------|---------|-----|----------|------|---------------------------------------|--|------|--------|
| HCONJ23 | 1012519 | 464 | 43 - 990 | 2639 | Met-8 to Lys-13,<br>Pro-23 to Trp-30. | H0647: 1, H0646: 1,<br>S0002: 1, S0426: 1,<br>L0768: 1, L0649: 1,<br>L0805: 1, L0659: 1,<br>H0702: 1, H0689: 1,<br>H0684: 1, H0670: 1,<br>H0539: 1, H0709: 1,<br>S0146: 1, H0576: 1,<br>L0744: 1, L0754: 1,<br>L0749: 1, L0750: 1,<br>L0777: 1, L0752: 1,<br>L0755: 1, S0260: 1,<br>S0308: 1, H0707: 1,<br>L0581: 1, H0677: 1 and<br>H0506: 1.         | 8q11 | 600899 |
|         |         |     |          |      |                                       | L0777: 14, L0748: 9,<br>L0747: 7, S0026: 6,<br>S0360: 4, H0519: 4,<br>L0749: 4, L0759: 4,<br>H0677: 4, H0686: 3,<br>H0014: 3, H0090: 3,<br>L0662: 3, L0794: 3,<br>L0766: 3, H0659: 3,<br>S0404: 3, L0439: 3,<br>L0740: 3, L0754: 3,<br>L0750: 3, S0276: 3,<br>H0170: 2, H0171: 2,<br>H0657: 2, H0341: 2,<br>S0212: 2, S0420: 2,<br>S0356: 2, S0444: 2, |      |        |



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|  | S0222: 2, H0392: 2,<br>H0486: 2, H0266: 2,<br>H0032: 2, L0767: 2,<br>L0803: 2, L0805: 2,<br>L0655: 2, L0657: 2,<br>L0659: 2, L0809: 2,<br>H0144: 2, S0374: 2,<br>L0756: 2, L0758: 2,<br>S0436: 2, L0591: 2,<br>L0485: 2, H0556: 1,<br>H0220: 1, H0656: 1,<br>S0001: 1, H0661: 1,<br>H0662: 1, S0358: 1,<br>S0376: 1, S0408: 1,<br>S0410: 1, H0619: 1,<br>H0600: 1, H0643: 1,<br>H0013: 1, H0427: 1,<br>H0156: 1, H0599: 1,<br>H0575: 1, S0010: 1,<br>S0346: 1, H0318: 1,<br>H0251: 1, L0163: 1,<br>S0388: 1, S0051: 1,<br>H0271: 1, H0644: 1,<br>H0111: 1, H0617: 1,<br>H0673: 1, H0169: 1,<br>L0456: 1, H0376: 1,<br>H0598: 1, H0591: 1,<br>H0040: 1, H0063: 1,<br>H0413: 1, T0042: 1,<br>H0560: 1, S0294: 1, |  |  |  |  |  |
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|         |         |     |         |      |   |  |  |   |  |  |
|---------|---------|-----|---------|------|---|--|--|---|--|--|
|         |         |     |         |      |   |  | S0450: 1, L0065: 1,<br>S0422: 1, S0002: 1,<br>L0598: 1, H0529: 1,<br>L0770: 1, L0769: 1,<br>L0761: 1, L0646: 1,<br>L0649: 1, L0388: 1,<br>L0775: 1, L0652: 1,<br>L0629: 1, L0527: 1,<br>L0790: 1, L0666: 1,<br>L0663: 1, L0664: 1,<br>S0052: 1, H0691: 1,<br>H0520: 1, H0547: 1,<br>H0682: 1, H0658: 1,<br>H0670: 1, H0666: 1,<br>H0648: 1, S0146: 1,<br>L0743: 1, L0751: 1,<br>L0752: 1, H0445: 1,<br>S0434: 1, L0608: 1,<br>H0665: 1, S0192: 1,<br>S0194: 1, H0543: 1 and<br>H0423: 1. |   |  |  |
| HVVBLO4 | 1012536 | 465 | 2 - 310 | 2640 | Lys-2 to Glu-13,<br>Asn-39 to Glu-47,<br>Arg-49 to Glu-56,<br>Lys-73 to Arg-85. | H0672: 2   |  |   |  |  |
| HVVAF65 | 1012542 | 466 | 3 - 731 | 2641 |   | L0748: 19, L0439: 7,<br>L0731: 6, L0775: 4,<br>S0356: 2, H0421: 2,<br>H0509: 2, L0805: 2,<br>L0783: 2, L0809: 2, | 17q24-q25  | 114290,<br>115660,<br>138033,<br>139250,<br>148500, |  |  |



|         |         |     |          |      |                  |  |         |                               |  |   |
|---------|---------|-----|----------|------|------------------|--|---------|-------------------------------|--|---|
|         |         |     |          |      |                  | S0136: 2, L0740: 2,<br>L0747: 2, L0749: 2,<br>L0599: 2, L0362: 2,<br>H0170: 1, S0470: 1,<br>L0005: 1, S0354: 1,<br>S0376: 1, S0045: 1,<br>S0278: 1, H0642: 1,<br>H0331: 1, H0574: 1,<br>H0036: 1, S0346: 1,<br>H0318: 1, L0157: 1,<br>H0050: 1, L0471: 1,<br>H0024: 1, H0275: 1,<br>H0594: 1, H0267: 1,<br>S0003: 1, H0031: 1,<br>H0412: 1, T0069: 1,<br>H0100: 1, T0041: 1,<br>L0475: 1, S0142: 1,<br>S0002: 1, L0769: 1,<br>L0776: 1, L0655: 1,<br>L0527: 1, L0664: 1,<br>S0374: 1, L0438: 1,<br>H0658: 1, H0672: 1,<br>S0380: 1, S0350: 1,<br>H0521: 1, S0146: 1,<br>L0777: 1, L0752: 1,<br>L0753: 1, L0757: 1 and<br>L0581: 1. |         |                               |  | 150200,<br>154275,<br>162100,<br>170500,<br>170500,<br>170500,<br>180860,<br>182452,<br>230200,<br>249000,<br>253250,<br>264470 |
| HCONN76 | 1012545 | 467 | 1 - 1716 | 2642 | Tyr-1 to Ser-12. | H0423: 16, H0521: 11,<br>L0777: 10, H0622: 9,<br>L0751: 9, H0641: 8,   | 21q22.3 | 120220,<br>120240,<br>123580, |  |   |



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|         |         |     |          |      |   |  |  |  |  |
|---------|---------|-----|----------|------|---|--|--|--|--|
|         |         |     |          |      |   | S0434: 1, L0604: 1 and<br>H0542: 1.  |  |  |  |
| HVVAF56 | 1012568 | 468 | 3 - 1382 | 2643 | Cys-2 to Ser-16,<br>Glu-55 to Lys-61,<br>Pro-83 to Leu-88,<br>Ser-135 to Pro-148,<br>Val-152 to Arg-163,<br>Pro-223 to Thr-230,<br>Ala-242 to Val-253,<br>Arg-258 to Glu-274,<br>Gly-290 to Asp-300,<br>Lys-337 to Asn-345,<br>Asp-373 to Ala-398,<br>Gly-401 to Lys-406,<br>Gln-410 to Ala-430,<br>Pro-433 to Gln-460. | L0766: 9, L0777: 9,<br>H0529: 8, H0521: 7,<br>L0731: 7, S0360: 6,<br>L0758: 6, H0494: 5,<br>L0749: 5, L0759: 5,<br>S0376: 4, H0639: 4,<br>S0422: 4, L0665: 4,<br>H0144: 4, H0520: 4,<br>H0547: 4, L0439: 4,<br>H0423: 4, S0424: 4,<br>H0581: 3, L0471: 3,<br>H0266: 3, S0150: 3,<br>L0764: 3, L0803: 3,<br>L0659: 3, L0666: 3,<br>H0519: 3, H0659: 3,<br>H0696: 3, L0755: 3,<br>H0716: 2, H0662: 2,<br>S0356: 2, S0046: 2,<br>H0013: 2, H0545: 2,<br>H0457: 2, H0551: 2,<br>H0100: 2, L0475: 2,<br>L0598: 2, L0763: 2,<br>L0770: 2, L0637: 2,<br>L0772: 2, L0765: 2,<br>L0662: 2, L0649: 2,<br>L0774: 2, L0775: 2,<br>L0776: 2, L0809: 2,<br>H0689: 2, S0406: 2, |  |  |  |







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| H0090: 1, H0616: 1,<br>T0067: 1, T0041: 1,<br>H0560: 1, H0561: 1,<br>S0294: 1, S0440: 1,<br>H0633: 1, H0647: 1,<br>L0762: 1, L0769: 1,<br>L0373: 1, L0372: 1,<br>L0641: 1, L0771: 1,<br>L0773: 1, L0521: 1,<br>L0768: 1, L0794: 1,<br>L0804: 1, L0375: 1,<br>L0806: 1, L0654: 1,<br>L0807: 1, L0657: 1,<br>L0517: 1, L0783: 1,<br>L0792: 1, L0663: 1,<br>S0374: 1, L0565: 1,<br>T0068: 1, H0693: 1,<br>H0593: 1, S0126: 1,<br>H0658: 1, H0670: 1,<br>H0672: 1, S0330: 1,<br>H0539: 1, S0378: 1,<br>S0380: 1, H0525: 1,<br>H0522: 1, H0694: 1,<br>S0176: 1, H0436: 1,<br>L0756: 1, L0779: 1,<br>S0434: 1, S0436: 1,<br>L0592: 1, L0593: 1,<br>L0366: 1, S0026: 1,<br>H0667: 1, H0543: 1,<br>H0422: 1, L0698: 1, |
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|---------|---------|-----|-----------|------|---|---|--|--|
| HODEG95 | 1012599 | 469 | 243 - 749 | 2644 | Arg-33 to Gly-38,<br>Pro-40 to Lys-52.  | S0460: 1, H0506: 1 and<br>H0352: 1.   |  |  |
| HCOOX52 | 1012600 | 470 | 2 - 1567  | 2645 | Arg-41 to Gly-65,<br>Pro-88 to Ser-96,<br>Thr-104 to Thr-141,<br>Glu-209 to Asn-214,<br>Arg-263 to Ser-269,<br>Ser-274 to Ala-279,<br>Lys-290 to Ile-296,<br>Lys-320 to Glu-333,<br>Val-517 to Ala-522. | H0615: 2 and H0343:<br>1.<br>L0581: 63, L0748: 35,<br>H0575: 22, L0599: 19,<br>H0046: 17, L0659: 17,<br>L0745: 16, H0510: 15,<br>L0662: 15, L0665: 15,<br>L0747: 14, H0509: 12,<br>L0744: 12, L0754: 12,<br>H0069: 11, L0751: 11,<br>H0574: 10, L0750: 10,<br>H0031: 9, H0124: 9,<br>L0757: 9, H0150: 8,<br>H0039: 8, S0360: 7,<br>S0132: 7, H0644: 7,<br>S0027: 7, S0212: 6,<br>H0393: 6, H0622: 6,<br>H0591: 6, L0803: 6,<br>L0806: 6, H0658: 6,<br>S0044: 6, S0028: 6,<br>S0358: 5, H0549: 5,<br>H0331: 5, H0427: 5,<br>H0251: 5, H0014: 5,<br>H0687: 5, H0059: 5,<br>L0595: 5, L0600: 5,<br>H0632: 4, H0618: 4,<br>H0200: 4, H0090: 4,<br>H0038: 4, L0770: 4, | 11q12-q13.1<br>106100,<br>133780,<br>147050,<br>259700,<br>259770,<br>600045,<br>601650,<br>601884 |  |



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|  | L0525: 4, L0809: 4,<br>L0663: 4, H0670: 4,<br>H0555: 4, L0758: 4,<br>L0603: 4, H0650: 3,<br>H0663: 3, H0550: 3,<br>T0060: 3, S0280: 3,<br>H0042: 3, S0314: 3,<br>L0142: 3, H0135: 3,<br>L0763: 3, L0372: 3,<br>L0766: 3, L0775: 3,<br>L0666: 3, H0144: 3,<br>H0693: 3, S0126: 3,<br>H0682: 3, S0380: 3,<br>H0436: 3, S0037: 3,<br>L0759: 3, S0031: 3,<br>H0445: 3, L0361: 3,<br>S0011: 3, H0662: 2,<br>H0619: 2, H0333: 2,<br>H0486: 2, H0013: 2,<br>L0021: 2, H0253: 2,<br>S0010: 2, H0309: 2,<br>H0123: 2, H0246: 2,<br>L0163: 2, H0355: 2,<br>H0188: 2, S0312: 2,<br>H0615: 2, H0688: 2,<br>H0424: 2, H0553: 2,<br>H0617: 2, L0455: 2,<br>H0641: 2, H0646: 2,<br>S0422: 2, L0646: 2,<br>L0794: 2, L0804: 2, |  |  |  |  |
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|  | S6028: 1, S0318: 1,<br>S0316: 1, S0250: 1,<br>H0328: 1, L0483: 1,<br>T0006: 1, S0364: 1,<br>S0366: 1, H0598: 1,<br>H0616: 1, H0087: 1,<br>H0264: 1, H0488: 1,<br>T0004: 1, H0334: 1,<br>H0625: 1, H0652: 1,<br>S0002: 1, L0762: 1,<br>L0640: 1, L0631: 1,<br>L0769: 1, L0637: 1,<br>L0667: 1, L0645: 1,<br>L0764: 1, L0771: 1,<br>L0773: 1, L0649: 1,<br>L0651: 1, L0653: 1,<br>L0658: 1, L0384: 1,<br>L0545: 1, L0791: 1,<br>S0428: 1, H0520: 1,<br>H0593: 1, H0689: 1,<br>H0659: 1, H0672: 1,<br>S0328: 1, S0330: 1,<br>S0378: 1, L0602: 1,<br>H0518: 1, H0187: 1,<br>S0118: 1, S3012: 1,<br>S0390: 1, L0741: 1,<br>L0742: 1, L0740: 1,<br>L0752: 1, L0731: 1,<br>H0595: 1, L0362: 1,<br>H0668: 1, H0543: 1, |  |
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| HVVBR10 | 1012618 | 471 | 3 - 1079 | 2646 | Lys-52 to Ser-59,<br>Lys-121 to Pro-128,<br>Ser-183 to Thr-189. | H0422: 1, S0042: 1,<br>H0008: 1 and H0352: 1.<br><br>L0439: 13, L0748: 11,<br>L0601: 8, L0747: 7,<br>L0750: 7, L0438: 5,<br>L0757: 5, L0770: 4,<br>L0769: 4, L0764: 4,<br>L0766: 4, L0731: 4,<br>L0803: 3, L0775: 3,<br>L0666: 3, H0521: 3,<br>L0751: 3, L0758: 3,<br>S0418: 2, H0550: 2,<br>H0013: 2, H0052: 2,<br>H0622: 2, H0494: 2,<br>L0646: 2, L0771: 2,<br>L0774: 2, L0663: 2,<br>L0565: 2, H0593: 2,<br>H0689: 2, H0672: 2,<br>S0328: 2, L0752: 2,<br>L0587: 2, L0600: 2,<br>H0556: 1, H0583: 1,<br>H0656: 1, H0341: 1,<br>S0001: 1, S0360: 1,<br>H0549: 1, H0455: 1,<br>H0586: 1, H0587: 1,<br>H0156: 1, H0253: 1,<br>H0318: 1, H0581: 1,<br>T0110: 1, H0150: 1,<br>H0019: 1, H0050: 1,<br>H0620: 1, S0050: 1. |  |  |
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|----------|---------|-----|----------|------|-------------------|---|--|--|--|--|--|
|          |         |     |          |      |                   |   | H0373: 1, H0355: 1,<br>S6028: 1, H0271: 1,<br>S0003: 1, H0252: 1,<br>H0553: 1, H0644: 1,<br>H0124: 1, S0036: 1,<br>H0135: 1, H0616: 1,<br>H0264: 1, H0056: 1,<br>L0435: 1, S0344: 1,<br>S0422: 1, S0002: 1,<br>H0529: 1, L0763: 1,<br>L0372: 1, L0773: 1,<br>L0768: 1, L0794: 1,<br>L0653: 1, L0776: 1,<br>L0655: 1, L0659: 1,<br>L0783: 1, L0792: 1,<br>L0664: 1, L0665: 1,<br>H0144: 1, S0126: 1,<br>H0659: 1, H0658: 1,<br>H0670: 1, S0330: 1,<br>S3012: 1, S0027: 1,<br>L0740: 1, L0754: 1,<br>L0749: 1, L0779: 1,<br>L0753: 1, L0755: 1,<br>L0759: 1, L0592: 1,<br>L0595: 1; H0543: 1,<br>UNKWN: 1 and H0352:<br>1. |  |  |  |  |
| HVV/BK78 | 1012645 | 472 | 44 - 643 | 2647 | Arg-11 to Arg-20. | H0672: 1 and S3014: 1.                          |  |  |  |  |  |
| HVV/BK73 | 1012646 | 473 | 2 - 745  | 2648 |                   | H0036: 1, H0644: 1, .<br>H0672: 1 and L0603: 1. | 7q34-qter  |  |  |  |  |



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| HCOMW35 | 1012652 | 474 | 3 - 527  | 2649 | Asp-49 to Asp-59,<br>Asp-110 to Ile-115,<br>Trp-137 to Ser-144.  | L0766: 10, S0358: 4,<br>H0318: 3, L0809: 3,<br>S0360: 2, H0617: 2,<br>H0264: 2, L0769: 2,<br>L0775: 2, H0670: 2,<br>H0462: 1, H0646: 1,<br>L0761: 1, L0764: 1,<br>L0771: 1, L0773: 1,<br>L0805: 1, L0787: 1,<br>S0374: 1, H0684: 1,<br>L0779: 1 and L0758: 1.   | 22q13.31 | 250100,<br>250800,<br>250800   |
| HVVB28  | 1012654 | 475 | 2 - 1117 | 2650 | Arg-1 to Gly-12,<br>Gly-19 to Trp-25,<br>Asp-31 to Gly-39,<br>Gly-43 to Glu-52,<br>Ala-63 to His-71,<br>Asn-141 to Phe-152,<br>Leu-200 to Leu-208. | L0803: 4, L0745: 4,<br>L0758: 4, H0672: 3,<br>S0007: 2, H0090: 2,<br>L0769: 2, L0804: 2,<br>L0774: 2, L0809: 2,<br>L0439: 2, L0749: 2,<br>L0731: 2, L0599: 2,<br>L0362: 2, S0418: 1,<br>S0360: 1, S0046: 1,<br>H0431: 1, H0486: 1,<br>H0013: 1, L0021: 1,<br>H0042: 1, S0010: 1,<br>H0052: 1, H0046: 1,<br>H0024: 1, H0266: 1,<br>H0687: 1, S0022: 1,<br>H0553: 1, L0770: 1,<br>L0794: 1, L0783: 1,<br>L0529: 1, H0435: 1,<br>S0152: 1, H0521: 1, | 4q27-q28 | 107250,<br>134820,<br>134820,<br>134820,<br>134820,<br>134830,<br>134850,<br>134850,<br>147680,<br>181600,<br>189800,<br>266300,<br>600919 |



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|--------|---------|-----|------------|------|---|--|---------|---|
| HVVR45 | 1012657 | 476 | 102 - 1742 | 2651 | Arg-23 to Thr-28,<br>Val-58 to Leu-67,<br>Pro-115 to Thr-122. | S0044: 1, H0555: 1,<br>S0260: 1, L0366: 1,<br>H0543: 1 and H0352: 1.<br><br>L0747: 15, L0740: 14,<br>L0779: 13, L0439: 9,<br>L0731: 9, L0748: 8,<br>L0776: 7, L0455: 6,<br>L0769: 6, L0744: 6,<br>L0756: 6, L0758: 6;<br>S0328: 5, H0521: 5,<br>L0752: 5, H0295: 4,<br>L0717: 4, L0663: 4,<br>H0672: 4, S0360: 3,<br>S0046: 3, H0427: 3,<br>H0599: 3, H0036: 3,<br>H0687: 3, S0250: 3,<br>S0022: 3, S0036: 3,<br>L0770: 3, L0662: 3,<br>L0774: 3, L0806: 3,<br>L0783: 3, S0052: 3,<br>H0144: 3, S0126: 3,<br>H0660: 3, H0539: 3,<br>L0742: 3, S0194: 3,<br>H0556: 2, T0049: 2,<br>H0662: 2, S0045: 2,<br>H0619: 2, L0622: 2,<br>H0013: 2, H0318: 2,<br>S0049: 2, H0356: 2,<br>H0553: 2, S0364: 2,<br>S0366: 2, H0551: 2, | 17q21.3 | 109270,<br>109270,<br>109270,<br>109270,<br>109270,<br>148065,<br>148080,<br>154275,<br>156490,<br>171190,<br>185800,<br>221820,<br>249000,<br>253250,<br>600119,<br>600119,<br>600525,<br>601844 |
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|  | L0625: 2, L0764: 2,<br>L0771: 2, L0648: 2,<br>L0768: 2, L0775: 2,<br>L0659: 2, L0666: 2,<br>L0664: 2, L0438: 2,<br>S0350: 2, L0611: 2,<br>L0743: 2, L0751: 2,<br>L0754: 2, L0749: 2,<br>L0755: 2, L0757: 2,<br>L0485: 2, L0595: 2,<br>L0603: 2, S0011: 2,<br>H0506: 2, H0171: 1,<br>H0265: 1, H0686: 1,<br>S6024: 1, S0114: 1,<br>S0430: 1, H0657: 1,<br>L0785: 1, S0116: 1,<br>S0212: 1, S0418: 1,<br>S0420: 1, L0005: 1,<br>S0376: 1, H0675: 1,<br>H0208: 1, S0132: 1,<br>H0393: 1, S0300: 1,<br>S6022: 1, H0261: 1,<br>H0549: 1, S0222: 1,<br>H0431: 1, H0391: 1,<br>H0586: 1, H0333: 1,<br>H0642: 1, H0643: 1,<br>L0623: 1, H0485: 1,<br>H0486: 1, H0122: 1,<br>S0010: 1, S0346: 1,<br>T0048: 1, H0196: 1, |  |  |  |  |  |
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|  | H0545: 1, H0046: 1,<br>H0009: 1, L0157: 1,<br>H0023: 1, H0024: 1,<br>H0014: 1, S0388: 1,<br>H0083: 1, H0239: 1,<br>H0510: 1, H0594: 1,<br>S6028: 1, H0266: 1,<br>H0615: 1, H0428: 1,<br>H0039: 1, H0622: 1,<br>H0424: 1, H0617: 1,<br>H0090: 1, H0038: 1,<br>H0040: 1, H0087: 1,<br>T0067: 1, T0042: 1,<br>H0494: 1, H0561: 1,<br>S0450: 1, H0641: 1,<br>S0344: 1, S0002: 1,<br>L0369: 1, L0762: 1,<br>L0763: 1, L0638: 1,<br>L0637: 1, L0372: 1,<br>L0767: 1, L0651: 1,<br>L0653: 1, L0661: 1,<br>L0515: 1, L0383: 1,<br>L0382: 1, L0809: 1,<br>L0367: 1, L0665: 1,<br>S0374: 1, H0519: 1,<br>H0683: 1, H0659: 1,<br>H0651: 1, S0330: 1,<br>S0380: 1, S0027: 1,<br>S0206: 1, L0745: 1,<br>L0750: 1, L0759: 1, |  |  |  |  |  |
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|---------|---------|-----|----------|------|-------------------|--|-------|--|
| HVVAF41 | 1012665 | 477 | 59 - 550 | 2652 | Pro-58 to Ser-64. | S0260: 1, H0595: 1,<br>L0591: 1, L0601: 1,<br>L0366: 1, H0665: 1,<br>H0667: 1, S0458: 1,<br>S0446: 1 and H0352: 1.<br>L0740: 15, L0748: 14,<br>L0752: 10, H0494: 9,<br>L0745: 9, H0013: 7,<br>L0774: 7, L0754: 7,<br>S0358: 6, S0444: 6,<br>L0771: 6, S0374: 6,<br>L0471: 5, H0032: 5,<br>L0646: 5, L0655: 5,<br>H0580: 4, H0574: 4,<br>H0014: 4, H0373: 4,<br>S0003: 4, H0529: 4,<br>L0770: 4, L0766: 4,<br>L0659: 4, L0665: 4,<br>H0624: 3, S0376: 3,<br>S0360: 3, S0408: 3,<br>H0592: 3, H0039: 3,<br>H0090: 3, T0042: 3,<br>L0773: 3, L0662: 3,<br>L0775: 3, L0663: 3,<br>L0581: 3, H0423: 3,<br>H0156: 2, H0599: 2,<br>H0575: 2, H0590: 2,<br>H0318: 2, H0581: 2,<br>H0457: 2, H0123: 2,<br>H0356: 2, H0553: 2, | 11q23 | 107680,<br>107680,<br>107680,<br>107680,<br>107680,<br>107720,<br>133780,<br>147791,<br>159555,<br>168000,<br>186740,<br>186830,<br>188025,<br>203750,<br>261640,<br>600048,<br>601382,<br>602574,<br>602574 |
|---------|---------|-----|----------|------|-------------------|--|-------|--|



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|  | H0597: 1, L0738: 1,<br>H0545: 1, H0355: 1,<br>H0510: 1, H0375: 1,<br>H0266: 1, H0188: 1,<br>H0644: 1, L0055: 1,<br>S0364: 1, H0038: 1,<br>H0380: 1, H0623: 1,<br>T0041: 1, L0475: 1,<br>H0560: 1, H0625: 1,<br>H0561: 1, S0466: 1,<br>H0509: 1, H0641: 1,<br>H0646: 1, H0652: 1,<br>S0344: 1, S0422: 1,<br>H0517: 1, L0772: 1,<br>L0642: 1, L0768: 1,<br>L0388: 1, L0650: 1,<br>L0651: 1, L0806: 1,<br>L0776: 1, L0606: 1,<br>L0661: 1, L0647: 1,<br>L0787: 1, L0789: 1,<br>H0520: 1, H0519: 1,<br>H0689: 1, H0658: 1,<br>H0670: 1, H0660: 1,<br>S0328: 1, S0330: 1,<br>H0539: 1, L0602: 1,<br>H0522: 1, S0406: 1,<br>L0749: 1, L0777: 1,<br>H0445: 1, L0596: 1,<br>L0588: 1, H0653: 1,<br>H0667: 1, S0192: 1, |  |  |  |  |  |
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|---------|---------|-----|------------|------|--|--|--|---|------|---|--|
|         |         |     |            |      |  |  |  | H0542: 1, H0543: 1,<br>S0424: 1, S0452: 1 and<br>S0458: 1.  |      |   |  |
| HVVAS32 | 1012668 | 478 | 105 - 2138 | 2653 |  |  |  | L0439: 7, S0136: 5,<br>L0438: 4, L0749: 4,<br>L0777: 4, L0752: 4,<br>S0010: 3, H0672: 3,<br>S0116: 2, L0717: 2,<br>H0013: 2, H0057: 2,<br>H0068: 2, H0551: 2,<br>S0002: 2, L0763: 2,<br>L0662: 2, L0794: 2,<br>L0766: 2, L0803: 2,<br>L0805: 2, L0776: 2,<br>L0547: 2, L0789: 2,<br>L0666: 2, L0665: 2,<br>H0670: 2, H0521: 2,<br>H0555: 2, L0748: 2,<br>L0751: 2, L0747: 2,<br>L0731: 2, L0758: 2,<br>L0759: 2, L0599: 2,<br>H0170: 1, T0002: 1,<br>S0040: 1, S0212: 1,<br>S0358: 1, S0045: 1,<br>S0046: 1, H0619: 1,<br>H0393: 1, H0392: 1,<br>H0409: 1, H0485: 1,<br>H0486: 1, H0244: 1,<br>H0427: 1, L0021: 1,<br>S0346: 1, H0196: 1, | 3q13 | 146200,<br>190300,<br>258900,<br>600882 |  |



|         |         |     |           |      |  |   |        |  |
|---------|---------|-----|-----------|------|--|---|--------|--|
| HVVAQ70 | 1012678 | 479 | 131 - 982 | 2654 | <p>Leu-59 to Cys-66,<br/>Gln-74 to Leu-82,<br/>Asn-107 to Arg-121,<br/>Thr-160 to Ser-166,<br/>Lys-198 to Ile-203.</p> | <p>H0052: 1, H0596: 1,<br/>H0150: 1, H0562: 1,<br/>H0024: 1, H0373: 1,<br/>T0010: 1, S0628: 1,<br/>H0687: 1, T0023: 1,<br/>H0553: 1, H0644: 1,<br/>S0364: 1, H0090: 1,<br/>H0040: 1, H0616: 1,<br/>T0067: 1, H0413: 1,<br/>S0038: 1, S0386: 1,<br/>S0150: 1, H0641: 1,<br/>L0520: 1, L0770: 1,<br/>L0637: 1, L0772: 1,<br/>L0372: 1, L0646: 1,<br/>L0800: 1, L0773: 1,<br/>L0768: 1, L0659: 1,<br/>L0782: 1, L0663: 1,<br/>H0144: 1, H0520: 1,<br/>H0593: 1, H0659: 1,<br/>H0658: 1, S0328: 1,<br/>S0044: 1, S0037: 1,<br/>S0028: 1, L0740: 1,<br/>L0756: 1, L0779: 1,<br/>L0780: 1, H0665: 1,<br/>S0192: 1 and S0194: 1.</p> | 8p11.2 | <p>136350,<br/>152760,<br/>180100,<br/>182900,<br/>277700,</p> |
|---------|---------|-----|-----------|------|--|---|--------|--|



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| L0471: 4, L0659: 4,<br>L0752: 4, L0755: 4,<br>L0592: 4, L0763: 3,<br>L0764: 3, L0756: 3,<br>S0026: 3, H0657: 2,<br>H0013: 2, H0052: 2,<br>H0687: 2, H0039: 2,<br>L0455: 2, L0772: 2,<br>L0766: 2, L0775: 2,<br>L0805: 2, L0665: 2,<br>S0126: 2, H0659: 2,<br>H0521: 2, L0750: 2,<br>L0779: 2, L0588: 2,<br>L0605: 2, L0593: 2,<br>L0362: 2, H0170: 1,<br>H0171: 1, L0448: 1,<br>H0686: 1, S0114: 1,<br>S0134: 1, H0583: 1,<br>S0212: 1, H0663: 1,<br>S0420: 1, S0358: 1,<br>H0580: 1, S0007: 1,<br>S0046: 1, H0393: 1,<br>L0717: 1, H0411: 1,<br>H0261: 1, S0222: 1,<br>H0632: 1, L0623: 1,<br>T0039: 1, H0069: 1,<br>H0427: 1, H0156: 1,<br>H0597: 1, H0546: 1,<br>H0373: 1, S0051: 1,<br>T0010: 1, S0214: 1, |  |  |  |  | 600617 |
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|---------|---------|-----|----------|------|---|--|--|--|
|         |         |     |          |      |   | H0031: 1, H0090: 1,<br>H0038: 1, H0063: 1,<br>H0087: 1, H0551: 1,<br>H0413: 1, S0038: 1,<br>T0042: 1, H0494: 1,<br>H0560: 1, H0142: 1,<br>L0520: 1, L0637: 1,<br>L0800: 1, L0773: 1,<br>L0521: 1, L0662: 1,<br>L0768: 1, L0794: 1,<br>L0803: 1, L0804: 1,<br>L0774: 1, L0806: 1,<br>L0776: 1, L0655: 1,<br>L0657: 1, L0512: 1,<br>L0558: 1, L0636: 1,<br>L0635: 1, H0520: 1,<br>H0519: 1, H0684: 1,<br>H0660: 1, H0666: 1,<br>H0672: 1, S0330: 1,<br>H0522: 1, H0576: 1,<br>S3014: 1, L0742: 1,<br>L0758: 1, H0444: 1,<br>L0594: 1, H0667: 1,<br>H0136: 1, H0543: 1 and<br>H0506: 1. |  |  |
| HVVAQ22 | 1012684 | 480 | 43 - 573 | 2655 | His-1 to Asn-13,<br>Ser-31 to Ser-42,<br>Glu-47 to Val-55,<br>Glu-65 to Val-70,<br>Ile-95 to Asp-100. | 3cen-q21   |  |  |



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| Lys-107 to Phe-118,<br>Asp-121 to Asn-127,<br>Cys-136 to Lys-142,<br>Met-165 to Glu-177. | H0411: 6, L0517: 6,<br>H0672: 6, L0747: 6,<br>H0369: 5, L0663: 5,<br>S0330: 5, L0758: 5,<br>S0358: 4, H0674: 4,<br>L0764: 4, L0776: 4,<br>L0783: 4, L0740: 4,<br>S0360: 3, H0645: 3,<br>H0550: 3, H0616: 3,<br>L0662: 3, L0775: 3,<br>H0144: 3, H0684: 3,<br>L0777: 3, L0590: 3,<br>L0599: 3, S0026: 3,<br>S0444: 2, H0489: 2,<br>T0039: 2, H0575: 2,<br>H0597: 2, H0545: 2,<br>H0015: 2, H0031: 2,<br>H0111: 2, H0032: 2,<br>H0169: 2, H0038: 2,<br>T0069: 2, S0440: 2,<br>L0772: 2, L0363: 2,<br>L0768: 2, L0804: 2,<br>L0782: 2, L0384: 2,<br>L0565: 2, S0126: 2,<br>S0328: 2, S0013: 2,<br>H0345: 2, L0743: 2,<br>L0749: 2, L0756: 2,<br>L0759: 2, S0260: 2,<br>H0506: 2, H0624: 1,<br>H0171: 1, S0342: 1, |
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|  | H0664: 1, H0662: 1,<br>S0408: 1, H0339: 1,<br>S0300: 1, L0717: 1,<br>H0600: 1, H0592: 1,<br>H0587: 1, H0486: 1,<br>H0013: 1, T0082: 1,<br>S0346: 1, S0474: 1,<br>H0251: 1, H0085: 1,<br>H0596: 1, H0231: 1,<br>H0544: 1, H0123: 1,<br>T0003: 1, H0014: 1,<br>L0163: 1, H0375: 1,<br>H0687: 1, S0214: 1,<br>H0328: 1, H0553: 1,<br>H0644: 1, H0163: 1,<br>H0090: 1, H0551: 1,<br>H0264: 1, L0386: 1,<br>L0533: 1, L0774: 1,<br>L0376: 1, L0784: 1,<br>L0378: 1, L0653: 1,<br>L0654: 1, L0559: 1,<br>L0659: 1, L0518: 1,<br>L0530: 1, L0788: 1,<br>L0791: 1, L0666: 1,<br>L0665: 1, H0693: 1,<br>H0658: 1, H0670: 1,<br>S0378: 1, S0380: 1,<br>S0044: 1, S0190: 1,<br>S0174: 1, S0168: 1,<br>L0751: 1, L0779: 1, |  |  |  |  |  |
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|---------|---------|-----|------------|------|--|---|-------------------|--|
| HTAES83 | 1012693 | 481 | 200 - 2128 | 2656 | Pro-55 to Asp-61,<br>Gln-66 to Leu-72. | L0780: 1, S0031: 1 and<br>S0412: 1.<br>H0457: 7, H0521: 7,<br>H0150: 5, H0585: 4,<br>H0255: 3, H0546: 3,<br>H0617: 3, S0002: 3,<br>L0659: 3, H0522: 3,<br>S0434: 3, H0650: 2,<br>H0254: 2, S0442: 2,<br>S0376: 2, H0250: 2,<br>S0003: 2, H0039: 2,<br>H0553: 2, L0771: 2,<br>L0662: 2, L0766: 2,<br>H0689: 2, H0682: 2,<br>L0751: 2, H0657: 1,<br>S0116: 1, H0402: 1,<br>S0418: 1, S0358: 1,<br>S0360: 1, S0132: 1,<br>S6026: 1, L0717: 1,<br>S0278: 1, H0549: 1,<br>H0610: 1, H0257: 1,<br>H0559: 1, H0069: 1,<br>H0581: 1, H0544: 1,<br>H0271: 1, H0687: 1,<br>H0286: 1, S0314: 1,<br>H0688: 1, T0023: 1,<br>H0606: 1, H0163: 1,<br>H0063: 1, H0264: 1,<br>S0464: 1, S0440: 1,<br>H0647: 1, S0344: 1, | 11q13.4-<br>q13.5 | 133780,<br>266150,<br>276903,<br>276903,<br>276903 |
|---------|---------|-----|------------|------|--|---|-------------------|--|



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|         |         |     |          |      |  |  |  | H0695: 1, L0770: 1,<br>L0638: 1, L0761: 1,<br>L0667: 1, L0642: 1,<br>L0643: 1, L0764: 1,<br>L0651: 1, L0654: 1,<br>L0783: 1, L0788: 1,<br>L0789: 1, L0665: 1,<br>S0052: 1, H0144: 1,<br>H0703: 1, H0547: 1,<br>H0593: 1, H0690: 1,<br>H0658: 1, H0672: 1,<br>S0378: 1, S0406: 1,<br>H0555: 1, H0436: 1,<br>S0027: 1, L0758: 1,<br>H0707: 1, S0011: 1,<br>H0542: 1 and H0423: 1. |       |  |  |
| HOCMN67 | 1012700 | 482 | 1 - 1182 | 2657 |  |  |  | H0457: 9, H0695: 8,<br>H0542: 7, H0521: 4,<br>H0436: 4, H0581: 3,<br>H0052: 3, H0135: 3,<br>H0494: 3, H0650: 2,<br>H0656: 2, S0356: 2,<br>H0059: 2, H0641: 2,<br>H0660: 2, L0741: 2,<br>H0543: 2, H0265: 1,<br>H0583: 1, H0255: 1,<br>H0458: 1, S0360: 1,<br>H0580: 1, S0278: 1,<br>H0438: 1, H0492: 1,<br>H0036: 1, H0590: 1,  | 11q13 | 102200,<br>106100,<br>131100,<br>131100,<br>131100,<br>133780,<br>147050,<br>153700,<br>161015,<br>164009,<br>168461,<br>168461,<br>168461,<br>180721, |  |



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|---------|---------|-----|------------|------|---------------------------------------|--|--|--|--|--|
|         |         |     |            |      |                                       |  |  | H0618: 1, H0318: 1,<br>H0544: 1, H0046: 1,<br>H0123: 1, H0081: 1,<br>T0010: 1, H0083: 1,<br>H0271: 1, H0553: 1,<br>H0163: 1, S0002: 1,<br>S0052: 1, H0702: 1,<br>H0703: 1, S0374: 1,<br>H0520: 1, H0547: 1,<br>H0690: 1, H0672: 1,<br>H0539: 1, S0380: 1,<br>S0406: 1, H0576: 1,<br>H0445: 1, S0434: 1,<br>L0601: 1, L0366: 1,<br>H0422: 1 and H0506: 1. |  | 180840,<br>191181,<br>193235,<br>209901,<br>232600,<br>259700,<br>259770,<br>600045,<br>600319,<br>600528,<br>601884 |
| HAPOW35 | 1012711 | 483 | 92 - 619   | 2658 | Ile-32 to Phe-42.                     |  |  | S0418: 2, S0328: 2,<br>H0521: 2, H0733: 1,<br>S0132: 1, H0575: 1,<br>H0024: 1, H0135: 1,<br>H0038: 1, S0038: 1,<br>S0406: 1, L0439: 1 and<br>H0543: 1.   |  |  |
| HOVJM48 | 1013085 | 484 | 2 - 454    | 2659 |                                       |  |  | H0688: 2, L0766: 2,<br>H0494: 1, L0652: 1,<br>L0731: 1 and L0759: 1.   |  |  |
| HBJHY84 | 1013213 | 485 | 1524 - 208 | 2660 | Gln-1 to Asp-24,<br>Phe-40 to Gln-46. |  |  | L0766: 12, L0758: 8,<br>S0422: 7, L0794: 6,<br>H0622: 5, H0666: 5,<br>L0754: 5, L0592: 5,<br>H0040: 4, L0663: 4,   |  |  |







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|         |         |     |            |      |   |  |  |    | H0682: 1, H0659: 1,<br>H0658: 1, H0648: 1,<br>S0380: 1, H0521: 1,<br>H0555: 1, H0576: 1,<br>S0392: 1, L0745: 1,<br>L0749: 1, L0779: 1,<br>H0444: 1, L0608: 1,<br>L0362: 1, H0542: 1,<br>L0465: 1, S0424: 1 and<br>S0462: 1. |        |                               |
| HODEY05 | 1013215 | 486 | 525 - 701  | 2661 | Val-10 to Ser-18,<br>Pro-30 to Glu-36,<br>Glu-47 to Gly-54.   |  |  |    | H0428: 2, S0114: 1,<br>H0656: 1, H0263: 1,<br>H0615: 1, H0684: 1 and<br>L0749: 1.   |        |                               |
| HFIAS44 | 1013288 | 487 | 112 - 1629 | 2662 | Arg-31 to Leu-43,<br>Gly-63 to Trp-78,<br>Thr-84 to Pro-89,<br>Asp-120 to Gly-141,<br>Glu-155 to Val-177,<br>Leu-204 to Ser-214,<br>Pro-230 to Lys-236,<br>Lys-300 to Lys-307,<br>Arg-329 to Ile-340,<br>Pro-343 to Ala-368,<br>Glu-375 to Pro-434,<br>Leu-441 to Lys-446,<br>Lys-464 to Glu-495. |  |  | 14 |   |        |                               |
| HHAUD68 | 1013349 | 488 | 212 - 538  | 2663 | Gly-1 to Pro-6,<br>Pro-21 to Ser-44,<br>Pro-51 to Lys-78,   |  |  |    | L0740: 4, H0591: 3,<br>H0583: 2, H0013: 2,<br>H0575: 2, H0266: 2,   | 6p21.3 | 106300,<br>108800,<br>120290, |



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|---------|---------|-----|---------|------|---|---|-------|--|--|
| HEEAA89 | 1013436 | 489 | 1.- 675 | 2664 | Asp-80 to Ser-95,<br>Leu-97 to Glu-103. | H0264: 2, L0805: 2,<br>H0144: 2, S0330: 2,<br>L0439: 2, H0445: 2,<br>H0170: 1, H0556: 1,<br>S0040: 1, S0218: 1,<br>H0656: 1, H0125: 1,<br>S0418: 1, S0376: 1,<br>H0587: 1, H0497: 1,<br>T0039: 1, H0069: 1,<br>H0635: 1, H0599: 1,<br>H0590: 1, H0318: 1,<br>H0052: 1, H0596: 1,<br>H0050: 1, S0003: 1,<br>H0622: 1, H0090: 1,<br>H0038: 1, H0634: 1,<br>H0616: 1, H0551: 1,<br>H0488: 1, S0016: 1,<br>H0561: 1, S0002: 1,<br>L0654: 1, L0518: 1,<br>S0374: 1, S0126: 1,<br>H0659: 1, H0660: 1,<br>H0672: 1, H0651: 1,<br>H0539: 1, H0521: 1,<br>H0555: 1, L0750: 1,<br>L0756: 1, L0757: 1,<br>L0596: 1, L0590: 1,<br>L0592: 1, S0026: 1,<br>H0217: 1 and H0542: 1. | 15q13 | 120290,<br>120810,<br>120820,<br>142857,<br>142858,<br>150270,<br>167250,<br>170261,<br>177900,<br>179450,<br>201910,<br>217000,<br>222100,<br>233100,<br>235200,<br>248611,<br>256550,<br>256550,<br>600202,<br>600261,<br>601868,<br>602280,<br>602475 |  |
|         |         |     |         |      |   |   |       | 103581,<br>146150,   |  |
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|  |  |  |  | H0059: 3, L0769: 3,<br>L0764: 3, H0352: 3,<br>S0410: 2, H0632: 2,<br>H0599: 2, H0046: 2,<br>H0038: 2, H0264: 2,<br>H0646: 2, S0002: 2,<br>H0529: 2, L0766: 2,<br>L0653: 2, L0659: 2,<br>L0439: 2, L0601: 2,<br>S0134: 1, H0583: 1,<br>L0785: 1, S0116: 1,<br>S0212: 1, H0255: 1,<br>S0418: 1, S0358: 1,<br>S0444: 1, H0675: 1,<br>H0728: 1, H0619: 1,<br>H0549: 1, H0392: 1,<br>H0331: 1, T0109: 1,<br>H0013: 1, H0635: 1,<br>H0618: 1, S0010: 1,<br>S0474: 1, H0052: 1,<br>L0157: 1, H0050: 1,<br>H0051: 1, H0375: 1,<br>H0039: 1, H0553: 1,<br>H0644: 1, L0456: 1,<br>S0036: 1, H0625: 1,<br>H0633: 1, L0637: 1,<br>L0773: 1, L0768: 1,<br>L0794: 1, L0522: 1,<br>L0509: 1, L0661: 1,<br>L0526: 1, L0809: 1, | 218000,<br>227220,<br>601623,<br>601800,<br>601889,<br>602117 |
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|         |         |     |           |      |                  |  |  | L0663: 1, L0664: 1,<br>L0665: 1, S0374: 1,<br>L0438: 1, H0547: 1,<br>H0648: 1, S0152: 1,<br>S3014: 1, L0745: 1,<br>L0747: 1, L0749: 1,<br>L0779: 1, L0777: 1,<br>L0597: 1, L0608: 1,<br>H0543: 1 and S0458: 1.   |   |  |  |
| HNTAK22 | 1013524 | 490 | 2 - 3175  | 2665 | Lys-1 to Lys-21. |  |  | H0519: 2, S0126: 2,<br>H0341: 1, H0125: 1,<br>L0562: 1, S0049: 1,<br>H0123: 1, H0687: 1,<br>H0292: 1, H0284: 1,<br>S0312: 1, S0250: 1,<br>H0622: 1, S0466: 1,<br>L0649: 1, S0037: 1 and<br>H0677: 1.   | 7 |  |  |
| HOVBX78 | 1013687 | 491 | 185 - 646 | 2666 |                  |  |  | AR096: 62, AR104:<br>41, AR089: 24, AR060:<br>24, AR061: 20, AR033:<br>16, AR053: 11, AR055:<br>11, AR039: 6<br>H0644: 5, L0439: 4,<br>L0438: 3, S0278: 2,<br>L0483: 2, H0581: 1,<br>H0046: 1, H0355: 1,<br>H0266: 1, H0038: 1,<br>H0670: 1, H0521: 1,<br>S0027: 1, L0740: 1 and |   |  |  |



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| HVVAW74 | 1013740 | 492 | 1066 - 575 | 2667 | Ala-16 to His-30,<br>Leu-106 to Gly-112,<br>Asp-129 to Pro-137,<br>Thr-144 to Leu-150. | S0260: 1,<br>L0526: 11, L0622: 8,<br>H0670: 8, H0087: 7,<br>S0360: 5, H0594: 5,<br>H0188: 5, H0412: 5,<br>S0206: 5, H0218: 4,<br>S0418: 4, H0318: 4,<br>H0024: 4, H0617: 4,<br>L0770: 4, L0783: 4,<br>S0328: 4, S0027: 4,<br>H0265: 3, H0663: 3,<br>T0048: 3, H0597: 3,<br>H0123: 3, H0673: 3,<br>S0366: 3, H0135: 3,<br>H0616: 3, S0002: 3,<br>L0775: 3, L0776: 3,<br>L0518: 3, L0663: 3,<br>H0144: 3, S0374: 3,<br>S0126: 3, S0380: 3,<br>S3014: 3, H0352: 3,<br>H0624: 2, H0556: 2,<br>H0219: 2, S0114: 2,<br>H0657: 2, H0341: 2,<br>S0110: 2, H0661: 2,<br>H0305: 2, H0351: 2,<br>H0492: 2, T0039: 2,<br>H0052: 2, H0546: 2,<br>H0178: 2, H0083: 2,<br>H0688: 2, H0068: 2,<br>H0038: 2, H0040: 2, | 19pter-q12 |  |
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| H0509: 2, S0142: 2,<br>S0426: 2, L0769: 2,<br>L0521: 2, L0768: 2,<br>H0689: 2, L0750: 2,<br>H0445: 2, H0170: 1,<br>H0686: 1, H0344: 1,<br>H0295: 1, H0294: 1,<br>S0134: 1, S0218: 1,<br>H0650: 1, L0760: 1,<br>S0116: 1, S0001: 1,<br>H0483: 1, H0255: 1,<br>H0662: 1, H0402: 1,<br>S0358: 1, S0376: 1,<br>H0675: 1, H0580: 1,<br>S0046: 1, S0132: 1,<br>S0278: 1, H0549: 1,<br>H0441: 1, H0370: 1,<br>H0455: 1, H0333: 1,<br>H0643: 1, L0623: 1,<br>T0060: 1, H0250: 1,<br>T0082: 1, S0010: 1,<br>H0505: 1, H0421: 1,<br>H0327: 1, H0545: 1,<br>H0150: 1, H0086: 1,<br>H0012: 1, H0099: 1,<br>H0109: 1, H0290: 1,<br>T0023: 1, H0031: 1,<br>H0181: 1, H0606: 1,<br>H0166: 1, H0674: 1,<br>H0124: 1, H0163: 1, |
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|---------|---------|-----|---------|------|---|---|-------|---|
| HPAMV95 | 1014003 | 494 | 3 - 713 | 2669 | Lys-70 to Tyr-79,<br>Lys-97 to Asp-102,<br>Ser-154 to Ser-160,<br>Asn-162 to Cys-169,<br>Lys-212 to Ser-217,<br>Ala-225 to Glu-230. | L0783: 2, H0658: 2,<br>H0670: 2, H0648: 2,<br>H0657: 1, S0116: 1,<br>S0001: 1, H0661: 1,<br>H0663: 1, H0450: 1,<br>S0622: 1, H0438: 1,<br>H0013: 1, S0280: 1,<br>T0082: 1, H0421: 1,<br>H0428: 1, T0067: 1,<br>H0477: 1, S0038: 1,<br>H0494: 1, L0762: 1,<br>L0371: 1, L0800: 1,<br>L0644: 1, L0773: 1,<br>L0648: 1, L0662: 1,<br>L0775: 1, L0375: 1,<br>L0378: 1, L0806: 1,<br>L0657: 1, L0666: 1,<br>L0664: 1, H0682: 1,<br>H0683: 1, S0378: 1,<br>L0748: 1, L0751: 1,<br>L0747: 1, L0753: 1,<br>L0608: 1 and H0543: 1. | 17q25 | 114290,<br>138033,<br>162100,<br>170500,<br>170500,<br>170500,<br>180860,<br>264470 |
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| HOVBX22 | 1014041 | 495 | 223 - 312 | 2670 | Ile-3 to Ser-11,<br>Arg-24 to Glu-30. | H0032: 2, S0144: 2,<br>L0803: 2, L0565: 2,<br>L0438: 2, L0439: 2,<br>S0418: 1, S0358: 1,<br>S0278: 1, H0392: 1,<br>H0592: 1, H0587: 1,<br>L0021: 1, H0052: 1,<br>H0546: 1, T0010: 1,<br>H0271: 1, H0687: 1,<br>S0214: 1, T0006: 1,<br>H0031: 1, H0553: 1,<br>L0142: 1, H0606: 1,<br>H0087: 1, S0142: 1,<br>S0208: 1, S0426: 1,<br>L0761: 1, L0772: 1,<br>L0800: 1, L0648: 1,<br>L0662: 1, L0774: 1,<br>L0653: 1, L0776: 1,<br>L0782: 1, L0664: 1,<br>H0519: 1, H0689: 1,<br>H0690: 1, H0682: 1,<br>H0658: 1, H0672: 1,<br>H0555: 1, L0749: 1,<br>L0756: 1, L0779: 1,<br>L0755: 1, L0591: 1,<br>S0026: 1, S0192: 1 and<br>S0196: 1. |  |  |
| HOVBX22 | 1014041 | 495 | 223 - 312 | 2670 | Ile-3 to Ser-11,<br>Arg-24 to Glu-30. | H0428: 3   |  |  |
| HPDRB63 | 1014204 | 496 | 2 - 571   | 2671 |                                       | H0123: 2, L0764: 2,  |  |  |



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|         |         |     |                |      |   |  | L0794: 2, L0803: 2,<br>S0356: 1, H0318: 1,<br>H0551: 1, L0662: 1,<br>L0804: 1, H0658: 1,<br>H0539: 1, L0786: 1,<br>H0543: 1 and H0423: 1. |       |  |
| HNHGJ66 | 1014252 | 497 | 2201 -<br>2467 | 2672 | Lys-1 to Ser-8,<br>Asn-32 to Asn-41,<br>Gln-48 to Glu-53,<br>Arg-73 to Ser-89.  |  | AR061: 5, AR055: 3,<br>AR096: 3, AR089: 2,<br>AR033: 2, AR060: 2,<br>AR104: 2, AR053: 1<br>S0038: 1 and S0053: 1.                         |       |  |
| HDPPN96 | 1014432 | 498 | 395 - 2434     | 2673 | Met-8 to Lys-13,<br>Met-46 to Lys-52,<br>Leu-89 to Lys-95,<br>Ala-100 to Val-109,<br>Pro-131 to Ser-160,<br>Arg-172 to Thr-178. |  | H0264: 1 and H0522: 1.  | 1q22  | 104770,<br>107670,<br>110700,<br>145001,<br>146790,<br>159440,<br>159440,<br>159440,<br>186780,<br>191030,<br>191315,<br>600923,<br>601412,<br>601652, -<br>602491 |
| HPCTH41 | 1014485 | 499 | 165 - 890      | 2674 | Ala-15 to Tyr-24,<br>His-32 to Lys-48,<br>Ala-60 to Gly-73,<br>Ser-82 to Phe-88,  |  | L0731: 10, L0758: 9,<br>L0592: 8, L0770: 7,<br>L0439: 7, L0754: 7,<br>L0766: 5, L0764: 4,   | 11q25 | 602782   |



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| Phe-105 to Phe-111,<br>Phe-124 to Thr-138,<br>Glu-211 to Val-217,<br>Val-219 to Gln-224. | L0662: 4, L0659: 4,<br>L0745: 4, L0655: 3,<br>L0666: 3, L0663: 3,<br>S0052: 3, L0748: 3,<br>L0747: 3, L0750: 3,<br>H0170: 2, S0360: 2,<br>S0046: 2, H0013: 2,<br>L0771: 2, L0768: 2,<br>L0794: 2, L0803: 2,<br>L0805: 2, L0664: 2,<br>H0144: 2, L0565: 2,<br>H0658: 2, H0710: 2,<br>L0740: 2, L0749: 2,<br>L0757: 2, L0608: 2,<br>H0556: 1, H0686: 1,<br>H0294: 1, S0114: 1,<br>S0282: 1, S0029: 1,<br>H0306: 1, L0005: 1,<br>S0356: 1, S0300: 1,<br>H0351: 1, H0369: 1,<br>S0222: 1, H0587: 1,<br>T0060: 1, H0250: 1,<br>H0635: 1, H0156: 1,<br>S0010: 1, H0052: 1,<br>H0263: 1, H0596: 1,<br>L0738: 1, H0545: 1,<br>H0103: 1, S0051: 1,<br>S0003: 1, S0214: 1,<br>H0328: 1, L0143: 1,<br>H0616: 1, H0412: 1, |
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| HPCTY73 | 1014646 | 500 | 2 - 2299 | 2675 | Cys-5 to Gly-10,<br>Ala-22 to Pro-31, --<br>Lys-107 to Pro-114,<br>Ala-149 to Arg-157,<br>Ile-294 to Leu-299,<br>Ser-356 to Pro-363,<br>Pro-384 to Phe-392, | L0564: 1, S0440: 1,<br>UNKWN: 1, L0598: 1,<br>H0529: 1, L0763: 1,<br>L0371: 1, L0769: 1,<br>L0638: 1, L0761: 1,<br>L0646: 1, L0773: 1,<br>L0648: 1, L0521: 1,<br>L0649: 1, L0389: 1,<br>L0806: 1, L0776: 1,<br>L0657: 1, L0656: 1,<br>L0783: 1, L0382: 1,<br>L0529: 1, L0791: 1,<br>S0374: 1, L0438: 1,<br>H0547: 1, H0659: 1,<br>H0648: 1, S0378: 1,<br>H0522: 1, H0704: 1,<br>S0406: 1, H0436: 1,<br>L0742: 1, L0744: 1,<br>L0756: 1, L0786: 1,<br>L0752: 1, H0444: 1,<br>L0589: 1, L0593: 1,<br>L0362: 1, H0542: 1,<br>S0446: 1 and H0352: 1. | 7p15 | 138079,<br>138079,<br>139191,<br>142959,<br>153880,<br>180104,<br>600994, |
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|--|--|--|--|--|--|--|--------|
|  |  |  |  | Ala-474 to Gly-481,<br>Ala-489 to Tyr-494,<br>Pro-512 to Lys-517,<br>Arg-623 to Thr-630,<br>Lys-673 to Ser-678,<br>Thr-703 to His-709,<br>Arg-714 to Arg-720,<br>Gly-755 to Glu-766. | H0543: 6, S0040: 5,<br>S0003: 5, S0022: 5,<br>S0214: 5, S0144: 5,<br>S0037: 5, L0747: 5,<br>L0777: 5, L0362: 5,<br>S0026: 5, T0039: 4,<br>H0318: 4, H0266: 4,<br>H0560: 4, L0590: 4,<br>L0599: 4, L0594: 4,<br>S0011: 4, H0265: 3,<br>H0657: 3, S0116: 3,<br>H0663: 3, S0360: 3,<br>S0045: 3, H0497: 3,<br>H0559: 3, S0010: 3,<br>H0052: 3, L0483: 3,<br>H0090: 3, H0494: 3,<br>L0766: 3, L0659: 3,<br>L0666: 3, H0435: 3,<br>L0602: 3, S0312: 3,<br>L0740: 3, L0750: 3,<br>L0731: 3, L0759: 3,<br>H0542: 3, S0212: 2,<br>H0431: 2, H0024: 2,<br>H0014: 2, H0083: 2,<br>H0428: 2, H0628: 2,<br>H0617: 2, H0634: 2,<br>H0551: 2, L0065: 2,<br>H0509: 2, S0150: 2,<br>S0210: 2, H0529: 2,<br>L0770: 2, L0768: 2, |  | 601649 |
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| L0775: 2, L0656: 2,<br>L0663: 2, H0520: 2,<br>H0659: 2, H0658: 2,<br>H0670: 2, S0152: 2,<br>H0521: 2, S0206: 2,<br>L0751: 2, L0756: 2,<br>L0597: 2, L0589: 2,<br>L0485: 2, L0604: 2,<br>L0595: 2, L0601: 2,<br>L0603: 2, H0686: 1,<br>H0583: 1, H0656: 1,<br>L0785: 1, S0298: 1,<br>H0402: 1, H0459: 1,<br>S0418: 1, S0376: 1,<br>H0580: 1, S0046: 1,<br>H0393: 1, S0278: 1,<br>H0437: 1, H0441: 1,<br>H0370: 1, H0587: 1,<br>H0486: 1, H0013: 1,<br>H0427: 1, H0156: 1,<br>H0575: 1, H0274: 1,<br>T0048: 1, H0581: 1,<br>H0421: 1, S0049: 1,<br>H0251: 1, L0738: 1,<br>H0123: 1, L0471: 1,<br>H0051: 1, S0388: 1,<br>S6028: 1, H0622: 1,<br>T0023: 1, T0006: 1,<br>H0644: 1, H0674: 1,<br>L0455: 1, H0598: 1, |  |  |  |  |  |
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|  | H0135: 1, H0616: 1,<br>H0063: 1, T0067: 1,<br>H0264: 1, H0268: 1,<br>H0269: 1, H0056: 1,<br>S0038: 1, T0042: 1,<br>H0625: 1, H0561: 1,<br>S0382: 1, S0464: 1,<br>H0633: 1, S0472: 1,<br>H0649: 1, S0142: 1,<br>S0422: 1, L0598: 1,<br>L0369: 1, L0769: 1,<br>L0772: 1, L0374: 1,<br>L0764: 1, L0771: 1,<br>L0662: 1, L0363: 1,<br>L0767: 1, L0388: 1,<br>L0375: 1, L0653: 1,<br>L0776: 1, L0661: 1,<br>L0542: 1, L0526: 1,<br>L0518: 1, L0519: 1,<br>L0788: 1, S0428: 1,<br>H0144: 1, H0547: 1,<br>H0690: 1, H0660: 1,<br>H0478: 1, H0627: 1,<br>H0631: 1, S0028: 1,<br>S0032: 1, L0743: 1,<br>L0749: 1, L0752: 1,<br>L0758: 1, S0031: 1,<br>H0445: 1, L0592: 1,<br>S0194: 1, H0423: 1,<br>H0422: 1, S0424: 1 and |  |  |  |  |  |
|--|---|--|--|--|--|--|



|         |         |     |         |      |  |  |  |  |
|---------|---------|-----|---------|------|--|--|--|--|
| HCOPQ33 | 1014730 | 501 | 3 - 380 | 2676 | Ser-3 to Gln-34,<br>Pro-43 to Ser-48,<br>Pro-51 to Tyr-69,<br>Asn-87 to Pro-92,<br>Pro-107 to Val-119. | H0008: 1,<br>S0360: 8, S0356: 6,<br>L0769: 6, L0598: 4,<br>L0666: 4, L0750: 4,<br>L0779: 4, L0758: 4,<br>H0013: 3, L0803: 3,<br>L0517: 3, L0809: 3,<br>S0222: 2, H0592: 2,<br>L0471: 2, H0169: 2,<br>L0761: 2, L0764: 2,<br>L0771: 2, L0776: 2,<br>L0783: 2, L0664: 2,<br>H0144: 2, H0670: 2,<br>S0380: 2, L0748: 2,<br>L0747: 2, L0777: 2,<br>S0026: 2, H0624: 1,<br>H0171: 1, S0040: 1,<br>S6024: 1, L0002: 1,<br>H0663: 1, L0005: 1,<br>S6026: 1, H0351: 1,<br>H0455: 1, H0600: 1,<br>T0040: 1, H0244: 1,<br>S0010: 1, H0052: 1,<br>L0738: 1, S0316: 1,<br>H0328: 1, H0615: 1,<br>H0388: 1, H0135: 1,<br>T0067: 1, H0059: 1,<br>H0560: 1, H0647: 1,<br>L0763: 1, L0646: 1,<br>L0773: 1, L0662: 1, |  |  |
|---------|---------|-----|---------|------|--|--|--|--|



|         |         |     |            |      |  |  |   |  |  |  |
|---------|---------|-----|------------|------|--|--|---|--|--|--|
|         |         |     |            |      |  |  | L0794: 1, L0805: 1,<br>L0653: 1, L0659: 1,<br>L0790: 1, H0682: 1,<br>H0684: 1, H0672: 1,<br>S0378: 1, S0152: 1,<br>H0478: 1, S3012: 1,<br>S0028: 1, L0749: 1,<br>L0757: 1, S0196: 1,<br>H0008: 1, H0293: 1 and<br>H0352: 1.   |  |  |  |
| HOEBR36 | 1014754 | 502 | 396 - 1061 | 2677 |  |  | T0004: 2, L0372: 1,<br>L0521: 1, L0806: 1,<br>S0126: 1, H0435: 1 and<br>L0731: 1.   |  |  |  |
| HLWDZ66 | 1014849 | 503 | 3 - 695    | 2678 | Asp-24 to Val-36,<br>Lys-38 to Glu-49,<br>Pro-80 to Ser-90,<br>Thr-131 to Gly-138. |  | AR096: 5, AR033: 4,<br>AR089: 3, AR053: 3,<br>AR052: 3, AR060: 3,<br>AR039: 2, AR104: 1,<br>AR055: 1, AR061: 1<br>L0803: 6, L0759: 6,<br>L0666: 4, L0805: 3,<br>L0756: 3, L0362: 3,<br>S0442: 2, L0646: 2,<br>L0794: 2, L0766: 2,<br>L0659: 2, H0144: 2,<br>L0438: 2, H0520: 2,<br>L0779: 2, L0596: 2,<br>H0423: 2, L0600: 2,<br>H0170: 1, S0114: 1,<br>H0650: 1, S0358: 1, |  |  |  |



|         |         |     |                |      |  |  |   |  |                              |
|---------|---------|-----|----------------|------|--|--|---|--|------------------------------|
| HOEER36 | 1014869 | 504 | 3051 -<br>2260 | 2679 |  |  | S0444: 1, S0360: 1,<br>H0329: 1, S0222: 1,<br>H0497: 1, H0036: 1,<br>S0474: 1, H0051: 1,<br>H0687: 1, S0214: 1,<br>H0615: 1, H0428: 1,<br>H0622: 1, H0553: 1,<br>H0598: 1, H0040: 1,<br>H0634: 1, L0060: 1,<br>T0041: 1, S0422: 1,<br>L0773: 1, L0774: 1,<br>L0657: 1, L0809: 1,<br>L0789: 1, L0664: 1,<br>S0126: 1, H0689: 1,<br>H0435: 1, H0670: 1,<br>L0748: 1, L0439: 1,<br>L0731: 1, S0031: 1 and<br>S0434: 1. |  | 125264,<br>600511,<br>601556 |
|         |         |     |                |      | Ala-32 to Ala-38,<br>Pro-55 to Glu-72,<br>Ala-83 to Glu-109,<br>Glu-114 to Leu-121,<br>Thr-135 to Lys-143,<br>Leu-149 to Lys-166,<br>Val-173 to Ser-178,<br>Lys-185 to Gln-195,<br>Pro-208 to Thr-214,<br>Gln-243 to Arg-253,<br>Lys-259 to Lys-264. | L0439: 13, L0766: 11,<br>L0747: 11, L0740: 10,<br>L0752: 9, L0776: 8,<br>L0809: 7, L0777: 7,<br>L0769: 6, L0803: 6,<br>L0748: 6, L0759: 6,<br>L0764: 5, H0659: 5,<br>L0755: 5, L0761: 4,<br>L0806: 4, L0438: 4,<br>L0749: 4, L0779: 4,<br>L0758: 4, H0083: 3,<br>L0796: 3, L0662: 3, | 6p23  |  |                              |



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|  | L0783: 3, L0663: 3,<br>H0658: 3, L0743: 3,<br>L0744: 3, L0751: 3,<br>L0750: 3, L0731: 3,<br>S0026: 3, S0134: 2,<br>H0657: 2, S0010: 2,<br>H0544: 2, S0051: 2,<br>H0266: 2, S0003: 2,<br>H0622: 2, L0763: 2,<br>L0768: 2, L0804: 2,<br>L0774: 2, L0775: 2,<br>L0655: 2, L0545: 2,<br>L0665: 2, H0547: 2,<br>H0689: 2, S0380: 2,<br>S3012: 2, S3014: 2,<br>L0756: 2, H0595: 2,<br>L0588: 2, L0605: 2,<br>L0362: 2, L0601: 2,<br>S0424: 2, H0624: 1,<br>H0171: 1, H0556: 1,<br>S0212: 1, H0664: 1,<br>L0005: 1, S0354: 1,<br>S0360: 1, S0410: 1,<br>H0580: 1, S0046: 1,<br>H0393: 1, H0411: 1,<br>H0549: 1, H0370: 1,<br>H0559: 1, H0427: 1,<br>H0318: 1, S0474: 1,<br>H0085: 1, T0115: 1,<br>H0327: 1, H0545: 1, |  |
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|---------|---------|-----|----------|------|-----------------|-----|---|--|-----|
| HE8OX75 | 1015010 | 505 | 18 - 170 | 2680 | Ser-1 to Tyr-6. | --- | H0046: 1, N0006: 1,<br>H0123: 1, L0471: 1,<br>S0388: 1, S0214: 1,<br>H0252: 1, L0483: 1,<br>H0553: 1, S0036: 1,<br>H0591: 1, H0038: 1,<br>H0040: 1, H0616: 1,<br>T0067: 1, H0413: 1,<br>S0386: 1, T0042: 1,<br>H0560: 1, L0598: 1,<br>H0529: 1, L0520: 1,<br>L0762: 1, L0772: 1,<br>L0646: 1, L0771: 1,<br>L0794: 1, L0375: 1,<br>L0805: 1, L0657: 1,<br>L0367: 1, L0787: 1,<br>L0666: 1, H0144: 1,<br>S0126: 1, H0648: 1,<br>H0672: 1, S0328: 1,<br>H0521: 1, S0037: 1,<br>L0754: 1, L0757: 1,<br>H0444: 1, L0591: 1,<br>H0667: 1, H0216: 1 and<br>H0543: 1. |  |     |
|         |         |     |          |      |                 |     | L0803: 4, L0745: 3,<br>L0804: 2, L0805: 2,<br>H0672: 2, L0742: 2,<br>L0752: 2, L0759: 2,<br>H0583: 1, H0369: 1,<br>H0550: 1, H0013: 1,  |  | --- |



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|  |  | L0522: 2, L0806: 2,<br>S0374: 2, H0547: 2,<br>H0519: 2, S0126: 2,<br>H0659: 2, L0745: 2,<br>L0750: 2, L0752: 2,<br>S0434: 2, H0506: 2,<br>H0265: 1, H0556: 1,<br>S0040: 1, H0717: 1,<br>H0294: 1, H0583: 1,<br>H0657: 1, L0785: 1,<br>H0669: 1, H0671: 1,<br>H0661: 1, H0663: 1,<br>H0664: 1, S0420: 1,<br>L0005: 1, S0356: 1,<br>S0132: 1, H0619: 1,<br>H0351: 1, S0222: 1,<br>S0220: 1, H0431: 1,<br>T0039: 1, H0618: 1,<br>T0110: 1, L0738: 1,<br>H0570: 1, H0569: 1,<br>L0471: 1, H0292: 1,<br>H0039: 1, H0034: 1,<br>H0031: 1, H0553: 1,<br>L0055: 1, H0166: 1,<br>H0169: 1, H0674: 1,<br>H0068: 1, H0598: 1,<br>S0036: 1, H0163: 1,<br>H0591: 1, H0359: 1,<br>S0450: 1, H0647: 1,<br>H0646: 1, S0344: 1, |  |  |  |  |
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|         |         |     |         |      |                                       |   |  |
|---------|---------|-----|---------|------|---------------------------------------|---|--|
| HDPXP07 | 1015059 | 507 | 3 - 242 | 2682 | Lys-1 to Trp-11,<br>Asn-13 to Lys-30, | L0638: 1, L0641: 1,<br>L0643: 1, L0764: 1,<br>L0363: 1, L0649: 1,<br>L0774: 1, L0775: 1,<br>L0376: 1, L0805: 1,<br>L0527: 1, L0657: 1,<br>L0512: 1, L0783: 1,<br>L0382: 1, L0787: 1,<br>L0532: 1, S0216: 1,<br>L0438: 1, H0520: 1,<br>H0593: 1, H0690: 1,<br>H0682: 1, H0683: 1,<br>H0435: 1, H0670: 1,<br>H0660: 1, H0666: 1,<br>H0648: 1, S0380: 1,<br>H0518: 1, H0696: 1,<br>S0044: 1, S0146: 1,<br>S0406: 1, S3012: 1,<br>S0027: 1, S0028: 1,<br>L0746: 1, L0749: 1,<br>L0779: 1, L0777: 1,<br>L0731: 1, L0758: 1,<br>S0031: 1, L0599: 1,<br>L0608: 1, L0595: 1,<br>H0668: 1, H0665: 1,<br>S0276: 1, H0423: 1,<br>S0424: 1, UNKWN: 1,<br>L0600: 1 and H0008: 1. | L0766: 7, L0769: 4,<br>L0747: 4, L0758: 4, |
|---------|---------|-----|---------|------|---------------------------------------|---|--|



|         |         |     |         |                   |  |  |  |  |  |
|---------|---------|-----|---------|-------------------|--|--|--|--|--|
|         |         |     |         | Leu-33 to Thr-53. | H0251: 3, L0805: 3,<br>S0007: 2, S0414: 2,<br>H0644: 2, H0672: 2,<br>S0026: 2, H0686: 1,<br>H0713: 1, H0663: 1,<br>S0376: 1, S0360: 1,<br>S0046: 1, L0717: 1,<br>H0574: 1, H0486: 1,<br>H0427: 1, H0596: 1,<br>L0040: 1, L0738: 1,<br>H0046: 1, H0571: 1,<br>L0471: 1, S0051: 1,<br>H0510: 1, S0003: 1,<br>S0214: 1, H0674: 1,<br>H0708: 1, H0038: 1,<br>H0412: 1, H0646: 1,<br>S0002: 1, L0773: 1,<br>L0662: 1, L0767: 1,<br>L0794: 1, L0804: 1,<br>L0806: 1, L0776: 1,<br>L0606: 1, L0783: 1,<br>L0792: 1, L0665: 1,<br>H0660: 1, H0648: 1,<br>H0521: 1, H0555: 1,<br>L0743: 1, L0756: 1,<br>L0777: 1, L0755: 1,<br>L0759: 1, S0031: 1,<br>L0362: 1, H0542: 1 and<br>H0543: 1. |  |  |  |  |
| HE2KH02 | 1015093 | 508 | 1 - 615 | 2683              | L0777: 11, L0438: 7,   |  |  |  |  |



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|         |         |     |                |      |  |  |   |  |  |  |
|---------|---------|-----|----------------|------|--|--|---|--|--|--|
|         |         |     |                |      |  |  | L0649: 1, L0804: 1,<br>L0805: 1, L0789: 1,<br>L0666: 1, L0663: 1,<br>L0665: 1, H0144: 1,<br>S0374: 1, H0520: 1,<br>H0658: 1, H0666: 1,<br>H0672: 1, S0380: 1,<br>S0406: 1, L0754: 1,<br>L0756: 1, L0758: 1,<br>S0031: 1 and L0589: 1.   |  |  |  |
| HSPSI60 | 1015133 | 509 | 2230 -<br>1901 | 2684 | Gln-20 to Glu-27,<br>Ser-43 to Ser-49,<br>Ser-89 to Ala-95.  |  | L0766: 5, L0438: 3,<br>L0777: 3, H0090: 2,<br>L0439: 2, L0731: 2,<br>L0759: 2, S0114: 1,<br>H0318: 1, L0471: 1,<br>H0687: 1, H0509: 1,<br>H0695: 1, L0803: 1,<br>L0774: 1, L0775: 1,<br>L0523: 1, L0806: 1,<br>L0776: 1, L0809: 1,<br>L0666: 1, H0690: 1,<br>H0683: 1, H0659: 1,<br>H0670: 1, L0749: 1 and<br>L0779: 1. |  |  |  |
| HOCOC26 | 1015143 | 510 | 97 - 693       | 2685 | Pro-1 to Ser-9,<br>Glu-48 to Gly-54,<br>Gly-66 to Leu-71,<br>Pro-78 to Glu-84,<br>Ala-108 to Gln-116,<br>Ile-167 to Asp-172, |  | L0748: 11, L0750: 5,<br>L0740: 4, L0756: 4,<br>L0758: 4, L0769: 3,<br>L0766: 3, L0776: 3,<br>L0779: 3, H0135: 2,<br>L0763: 2, L0770: 2,   |  |  |  |



|         |         |     |          |      |  |   |  |  |
|---------|---------|-----|----------|------|--|---|--|--|
|         |         |     |          |      | Thr-179 to His-185.                    | L0796: 2, L0768: 2,<br>L0774: 2, L0783: 2,<br>L0809: 2, L0438: 2,<br>H0519: 2, H0672: 2,<br>L0751: 2, L0747: 2,<br>L0777: 2, L0755: 2,<br>L0757: 2, H0341: 1,<br>S0356: 1, S0442: 1,<br>S0444: 1, S0360: 1,<br>S0046: 1, H0431: 1,<br>T0040: 1, H0599: 1,<br>H0327: 1, H0046: 1,<br>H0024: 1, H0014: 1,<br>H0510: 1, H0688: 1,<br>H0708: 1, H0413: 1,<br>H0131: 1, S0150: 1,<br>S0426: 1, L0373: 1,<br>L0646: 1, L0771: 1,<br>L0773: 1, L0650: 1,<br>L0666: 1, S0374: 1,<br>H0684: 1, H0660: 1,<br>S0380: 1, S0406: 1,<br>L0749: 1, L0752: 1,<br>L0753: 1, L0588: 1,<br>L0599: 1, H0543: 1,<br>H0423: 1 and H0422: 1. |  |  |
| HHEDC05 | 1015204 | 511 | 1035 - 7 | 2686 | Pro-43 to Cys-48,<br>Thr-75 to Gln-82. | H0695: 124, H0542:<br>48, H0730: 32, H0688:<br>27, H0735: 25, H0684:<br>24, H0728: 23, H0687:   |  |  |



|         |         |     |          |      |  |   |  |  |
|---------|---------|-----|----------|------|--|---|--|--|
| HODES86 | 1015304 | 512 | 89 - 421 | 2687 |  | 23, H0744: 19, H0703: 19, H0580: 18, H0717: 17, H0685: 15, H0729: 15, H0722: 15, H0740: 13, H0733: 11, H0521: 9, H0713: 8, H0543: 8, H0494: 7, H0689: 7, H0716: 6, H0741: 6, H0696: 6, H0734: 5, H0739: 4, H0545: 4, H0699: 4, H0725: 4, H0686: 3, H0592: 3, H0587: 3, H0581: 3, H0743: 3, H0726: 3, H0690: 3, H0683: 3, H0732: 3, H0712: 3, H0742: 2, H0544: 2, H0708: 2, H0488: 2, H0724: 2, H0710: 2, H0709: 2, H0555: 2, H0171: 1, H0738: 1, S0282: 1, H0600: 1, H0586: 1, H0318: 1, H0617: 1, S0036: 1, H0561: 1, S0422: 1, S0053: 1, S0216: 1, H0723: 1, H0522: 1, S0146: 1, H0727: 1, S0260: 1 and S0436: 1. |  |  |
|         |         |     |          |      |  | L0753: 3, H0615: 1  |  |  |



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|---------|---------|-----|------------|------|---|--|--|--|
| HOPJU57 | 1015324 | 513 | 943 - 1164 | 2688 | Gly-1 to Tyr-6,<br>Lys-10 to Gly-19,<br>Ser-46 to Lys-59. | and H0683: 1,<br>H0585: 21, L0742: 12,<br>L0747: 9, S0358: 8,<br>H0052: 8, S0126: 8,<br>H0141: 7, H0620: 7,<br>L0748: 7, H0009: 6,<br>H0624: 4, S0408: 4,<br>H0427: 4, H0081: 4,<br>S0051: 4, H0660: 4,<br>L0750: 4, S0444: 3,<br>H0393: 3, H0599: 3,<br>H0618: 3, L0471: 3,<br>H0083: 3, H0617: 3,<br>H0708: 3, H0413: 3,<br>H0494: 3, H0672: 3,<br>L0740: 3, L0751: 3,<br>L0755: 3, H0171: 2,<br>H0294: 2, S0046: 2,<br>H0455: 2, H0333: 2,<br>H0156: 2, H0002: 2,<br>H0097: 2, H0706: 2,<br>S0049: 2, H0024: 2,<br>H0373: 2, H0356: 2,<br>S0364: 2, S0366: 2,<br>H0135: 2, H0412: 2,<br>S0440: 2, L0640: 2,<br>L0766: 2, L0532: 2,<br>L0754: 2, L0757: 2,<br>S0031: 2, L0604: 2,<br>H0506: 2, H0161: 1, |  |  |
|---------|---------|-----|------------|------|---|--|--|--|



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|--|--|--|
|  | H0717: 1, H0716: 1,<br>H0583: 1, H0657: 1,<br>S0282: 1, H0664: 1,<br>H0402: 1, H0638: 1,<br>S0354: 1, S0376: 1,<br>S0360: 1, H0208: 1,<br>S0476: 1, H0411: 1,<br>S6022: 1, S6016: 1,<br>H0392: 1, H0438: 1,<br>H0600: 1, H0586: 1,<br>H0331: 1, H0574: 1,<br>T0109: 1, H0013: 1,<br>H0253: 1, H0390: 1,<br>H0581: 1, H0173: 1,<br>H0194: 1, H0204: 1,<br>H0231: 1, H0327: 1,<br>H0530: 1, H0544: 1,<br>H0123: 1, H0051: 1,<br>H0099: 1, S0340: 1,<br>H0428: 1, H0424: 1,<br>H0213: 1, L0142: 1,<br>H0628: 1, H0032: 1,<br>H0634: 1, S0038: 1,<br>H0100: 1, T0041: 1,<br>T0042: 1, S0438: 1,<br>H0641: 1, H0652: 1,<br>S0144: 1, L0769: 1,<br>L0638: 1, L0771: 1,<br>L0662: 1, L0768: 1,<br>L0653: 1, L0776: 1, |  |
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|         |         |     |          |      |                   |  |          |   |
|---------|---------|-----|----------|------|-------------------|--|----------|---|
| HVCAC71 | 1015343 | 514 | 2 - 1204 | 2689 | Pro-13 to Pro-23. | L0807: 1, H0593: 1,<br>H0682: 1, H0684: 1,<br>H0658: 1, H0670: 1,<br>S0330: 1, H0522: 1,<br>H0576: 1, L0612: 1,<br>S3014: 1, S0027: 1,<br>L0744: 1, L0745: 1,<br>L0731: 1, H0445: 1 and<br>S0434: 1. | 4q21-q25 | 104500,<br>125490,<br>137600,<br>147790,<br>173910,<br>189800,<br>217030,<br>248510,<br>252500,<br>252500,<br>600919,<br>601542 |
|---------|---------|-----|----------|------|-------------------|--|----------|---|



|         |         |     |          |      |  |   |  |  |
|---------|---------|-----|----------|------|--|---|--|--|
| HSXCQ55 | 1015360 | 515 | 6 - 1076 | 2690 | Val-9 to Gly-18, --<br>Pro-21 to Gly-27,<br>Gly-81 to Trp-91,<br>Lys-120 to Gly-126,<br>Ile-166 to Pro-172,<br>Val-185 to Ala-192, | H0596: 1, H0530: 1,<br>H0544: 1, H0081: 1,<br>H0050: 1, H0014: 1,<br>H0373: 1, S0003: 1,<br>S0022: 1, L0194: 1,<br>H0213: 1, H0644: 1,<br>S0364: 1, S0366: 1,<br>H0040: 1, H0634: 1,<br>T0067: 1, H0268: 1,<br>H0623: 1, L0475: 1,<br>H0561: 1, S0150: 1,<br>H0646: 1, L0766: 1,<br>H0702: 1, S0374: 1,<br>H0520: 1, H0683: 1,<br>H0435: 1, H0660: 1,<br>H0666: 1, H0672: 1,<br>S0380: 1, H0696: 1,<br>S0027: 1, S0032: 1,<br>L0740: 1, L0747: 1,<br>S0434: 1, S0436: 1,<br>L0597: 1, H0667: 1,<br>S0194: 1, H0542: 1,<br>H0543: 1, S0424: 1 and<br>H0293: 1. |  |  |
|         |         |     |          |      |  | L0749: 14, L0439: 8,<br>L0438: 6, L0748: 4,<br>L0747: 4, L0779: 4,<br>L0769: 3, S0442: 2,<br>S0038: 2, L0764: 2,<br>L0662: 2, L0766: 2,   |  |  |



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|  |  |  |  |  | Asp-207 to Ser-212,<br>Ser-241 to Lys-248,<br>Trp-250 to Tyr-258,<br>Gln-287 to Asn-292. | L0659: 2, L0809: 2,<br>L0666: 2, H0144: 2,<br>H0658: 2, L0754: 2,<br>L0750: 2, L0756: 2,<br>L0777: 2, L0780: 2,<br>H0624: 1, H0170: 1,<br>H0171: 1, H0556: 1,<br>S0402: 1, S0282: 1,<br>H0645: 1, L0717: 1,<br>H0586: 1, L0586: 1,<br>H0427: 1, S0010: 1,<br>H0046: 1, H0457: 1,<br>H0050: 1, L0471: 1,<br>S0051: 1, T0010: 1,<br>S6028: 1, H0688: 1,<br>H0031: 1, H0169: 1,<br>S0036: 1, H0135: 1,<br>H0494: 1, H0560: 1,<br>S0438: 1, H0207: 1,<br>H0633: 1, H0647: 1,<br>S0142: 1, S0422: 1,<br>L0803: 1, L0804: 1,<br>L0776: 1, L0655: 1,<br>S0148: 1, H0547: 1,<br>S0126: 1, H0683: 1,<br>H0670: 1, H0672: 1,<br>H0539: 1, L0744: 1,<br>L0757: 1, L0758: 1,<br>L0759: 1, L0593: 1,<br>H0543: 1 and H0423: 1. |  |  |
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|---------|---------|-----|------------|------|-------------------|---|---|--|
| HLWDB78 | 1015430 | 516 | 57 - 629   | 2691 | Lys-90 to Arg-96. | L0766: 4, L0748: 4,<br>S0037: 2, L0749: 2,<br>S0360: 1, H0571: 1,<br>S0003: 1, H0553: 1,<br>H0551: 1, S0142: 1,<br>S0002: 1, L0794: 1,<br>L0804: 1, H0519: 1,<br>H0659: 1, H0660: 1,<br>L0754: 1 and H0136: 1.  |   |  |
| HPCQU04 | 1015563 | 517 | 216 - 1232 | 2692 |                   | H0585: 26, H0141: 12,<br>4q21<br>H0623: 6, L0766: 6,<br>H0013: 5, H0318: 5,<br>H0556: 4, H0657: 4,<br>H0457: 4, L0471: 4,<br>L0776: 4, H0659: 4,<br>S0360: 3, H0599: 3,<br>S0010: 3, S0003: 3,<br>H0634: 3, T0067: 3,<br>H0538: 3, L0598: 3,<br>L0770: 3, L0764: 3,<br>H0144: 3, L0751: 3,<br>L0747: 3, L0757: 3,<br>L0758: 3, H0445: 3,<br>H0542: 3, T0002: 2,<br>S0418: 2, S0376: 2,<br>S0132: 2, S0222: 2,<br>H0497: 2, H0559: 2,<br>H0620: 2, H0083: 2,<br>H0428: 2, H0124: 2,<br>H0068: 2, H0090: 2, | 104500,<br>125490,<br>147790,<br>173910,<br>252500,<br>252500 |  |



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|--|--|--|--|--|--|
| H0412: 2, H0494: 2,<br>H0561: 2, L0769: 2,<br>L0372: 2, L0775: 2,<br>L0375: 2, L0655: 2,<br>L0517: 2, L0526: 2,<br>H0520: 2, H0519: 2,<br>S0126: 2, S0330: 2,<br>H0521: 2, S0206: 2,<br>L0743: 2, L0745: 2,<br>L0752: 2, L0593: 2,<br>L0595: 2, S0026: 2,<br>H0543: 2, H0423: 2,<br>H0265: 1, H0686: 1,<br>S0342: 1, T0049: 1,<br>S0134: 1, H0650: 1,<br>S0116: 1, H0341: 1,<br>H0661: 1, S0420: 1,<br>S0356: 1, L0717: 1,<br>S0278: 1, H0549: 1,<br>H0550: 1, H0441: 1,<br>H0442: 1, S0005: 1,<br>L0623: 1, H0486: 1,<br>T0114: 1, S0280: 1,<br>H0575: 1, H0581: 1,<br>H0052: 1, H0046: 1,<br>H0123: 1, H0050: 1,<br>H0012: 1, H0015: 1,<br>H0239: 1, H0375: 1,<br>S0022: 1, H0615: 1,<br>H0030: 1, H0644: 1, |  |  |  |  |  |
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|         |         |     |            |      |   |   |  |  |
|---------|---------|-----|------------|------|---|---|--|--|
|         |         |     |            |      |   | H0628: 1, H0617: 1,<br>H0674: 1, H0316: 1,<br>S0036: 1, H0591: 1,<br>H0040: 1, H0380: 1,<br>H0100: 1, S0372: 1,<br>H0509: 1, H0132: 1,<br>S0142: 1, S0210: 1,<br>S0002: 1, H0529: 1,<br>L0369: 1, L0520: 1,<br>L0763: 1, L0761: 1,<br>L0667: 1, L0386: 1,<br>L0657: 1, L0789: 1,<br>L0666: 1, H0697: 1,<br>T0068: 1, H0547: 1,<br>H0593: 1, H0670: 1,<br>H0539: 1, H0555: 1,<br>H0436: 1, S3014: 1,<br>S0028: 1, L0754: 1,<br>L0750: 1, L0756: 1,<br>L0755: 1, L0588: 1,<br>L0599: 1, L0362: 1,<br>L0361: 1, L0601: 1,<br>S0011: 1, H0665: 1,<br>S0424: 1 and L0600: 1. |  |  |
| HDPAT52 | 1015574 | 518 | 1387 - 335 | 2693 | Pro-11 to Gly-18,---<br>Glu-24 to Cys-32,<br>Glu-34 to Met-47,<br>Ala-55 to Glu-60,<br>Ile-75 to Gln-81,<br>Ser-132 to Thr-139, | L0599: 2, H0253: 1,<br>H0581: 1, H0263: 1,<br>H0200: 1, H0040: 1,<br>H0623: 1, H0280: 1,<br>H0593: 1, H0521: 1 and<br>H0555: 1.   |  |  |



|         |         |     |          |      |   |   |  |  |
|---------|---------|-----|----------|------|---|---|--|--|
| HAOSL81 | 1015620 | 519 | 28 - 747 | 2694 | <p>Gln-167 to Gln-180,<br/>Leu-183 to Phe-195,<br/>Gln-211 to Gln-223,<br/>Gln-232 to Leu-244,<br/>Gln-253 to Ala-269,<br/>Pro-274 to Leu-292,<br/>Thr-302 to Thr-330.</p> <p>Asp-1 to Lys-6,<br/>Gln-29 to Gly-35,<br/>Pro-39 to Arg-49,<br/>Pro-51 to Trp-58,<br/>Ser-78 to Gly-83,<br/>Ser-179 to His-194.</p> | <p>H0124: 11, L0751: 5,<br/>L0747: 4, H0295: 3,<br/>H0620: 3, L0794: 3,<br/>L0741: 3, L0758: 3,<br/>H0686: 2, H0549: 2,<br/>H0617: 2, L0768: 2,<br/>L0766: 2, L0774: 2,<br/>L0745: 2, L0731: 2,<br/>H0656: 1, S0420: 1,<br/>S0444: 1, S0360: 1,<br/>S0408: 1, S0222: 1,<br/>H0486: 1, H0013: 1,<br/>L0021: 1, H0052: 1,<br/>H0327: 1, H0009: 1,<br/>T0010: 1, H0033: 1,<br/>H0604: 1, H0031: 1,<br/>H0068: 1, H0038: 1,<br/>H0100: 1, H0509: 1,<br/>L0769: 1, L0761: 1,<br/>L0804: 1, L0775: 1,<br/>L0636: 1, L0809: 1,<br/>L0792: 1, L4501: 1,<br/>L0665: 1, L0438: 1,</p> |  |  |
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|---------|---------|-----|----------|------|--|---|---------------------|--|
| HMWTU46 | 1015814 | 520 | 1 - 1152 | 2695 | Gly-4 to Gln-11,<br>Val-87 to Asn-97,<br>Gly-168 to Leu-178,<br>Asp-194 to Phe-200,<br>Phe-205 to Arg-210,<br>Gln-292 to Gly-306,<br>Gly-328 to Ser-342,<br>Gly-349 to Asp-358,<br>His-365 to Asp-379. | H0684: 1, H0660: 1,<br>H0539: 1, H0555: 1,<br>L0742: 1, L0786: 1,<br>H0668: 1 and S0424: 1.   | 20q11.21-<br>q11.23 |  |
| HSXCQ19 | 1015994 | 521 | 3 - 1100 | 2696 | Gly-5 to Ala-25,<br>Pro-28 to Leu-43,<br>Pro-45 to Glu-57,<br>Pro-64 to Trp-70,<br>Gly-76 to Ala-90,<br>Gly-99 to Gly-106.   | L0809: 7, L0758: 7,<br>S0007: 4, L0662: 4,<br>L0794: 4, L0665: 4,<br>L0439: 4, L0754: 4,<br>H0333: 3, L0769: 3,<br>L0761: 3, L0803: 3,<br>H0395: 2, S0222: 2,<br>H0124: 2, S0036: 2,<br>L0535: 2, L0666: 2,<br>H0658: 2, L0751: 2,<br>L0747: 2, L0485: 2,<br>H0716: 1, H0295: 1,<br>H0402: 1, S0418: 1,<br>S0442: 1, H0619: 1,<br>H0586: 1, L0623: 1,<br>H0486: 1, S0280: 1,<br>L0021: 1, H0618: 1, |                     |  |



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|---------|---------|-----|-----------|------|---------------------------------------|---|--------|---|
| HNOAG06 | 1016272 | 522 | 316 - 546 | 2697 | Pro-8 to Asn-22,<br>Thr-31 to Ser-36. | H0318: 1, H0052: 1,<br>H0251: 1, H0123: 1,<br>H0050: 1, H0012: 1,<br>S0051: 1, H0179: 1,<br>H0615: 1, T0006: 1,<br>H0673: 1, H0135: 1,<br>H0087: 1, H0264: 1,<br>H0100: 1, L0763: 1,<br>L5565: 1, L0667: 1,<br>L0772: 1, L0644: 1,<br>L0768: 1, L0775: 1,<br>L0805: 1, L0655: 1,<br>L0659: 1, L0526: 1,<br>L0663: 1, S0052: 1,<br>H0682: 1, H0660: 1,<br>L0602: 1, L0743: 1,<br>L0750: 1, L0756: 1,<br>L0779: 1, L0777: 1,<br>L0592: 1, H0136: 1 and<br>S0424: 1. | 1q21.1 | 104770,<br>107670,<br>110700,<br>145001,<br>146790,<br>191315,<br>601412,<br>601652,<br>601863,<br>602491 |
|         |         |     |           |      |                                       | L0754: 3, L0662: 2,<br>L0766: 2, L0805: 2,<br>S0052: 2, L0747: 2,<br>L0749: 2, L0731: 2,<br>L0758: 2, L0759: 2,<br>L0591: 2, L0599: 2,<br>L0595: 2, S0045: 1,<br>L0021: 1, H0053: 1,<br>H0318: 1, H0150: 1,<br>H0617: 1, H0040: 1.  |        |   |



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|---------|---------|-----|---------|------|--|--|--|--|--|
|         |         |     |         |      |  | H0359: 1, L0770: 1,<br>L0521: 1, L0768: 1,<br>L0803: 1, L0804: 1,<br>L0659: 1, L0809: 1,<br>L0789: 1, H0648: 1,<br>H0651: 1, L0779: 1,<br>L0780: 1 and L0752: 1.   |  |  |  |
| HE2KN09 | 1016351 | 523 | 3 - 656 | 2698 |  | AR052: 27, AR033:<br>27, AR039: 25, AR053:<br>24, AR055: 19, AR089:<br>19, AR096: 19, AR104:<br>17, AR060: 14, AR061:<br>12<br>L0776: 4, L0783: 4,<br>H0624: 3, H0559: 3,<br>H0620: 3, H0615: 3,<br>H0100: 3, L0769: 3,<br>L0766: 3, L0755: 3,<br>H0619: 2, H0081: 2,<br>H0604: 2, L0775: 2,<br>L0375: 2, L0659: 2,<br>L0809: 2, H0670: 2,<br>H0672: 2, H0539: 2,<br>L0777: 2, L0759: 2,<br>T0002: 1; H0295: 1,<br>T0049: 1, H0657: 1,<br>H0381: 1, H0661: 1,<br>H0662: 1, S0442: 1,<br>S0376: 1, S0360: 1,<br>S0408: 1, H0550: 1, |  |  |  |



|         |         |     |            |      |  |  |  |  |  |
|---------|---------|-----|------------|------|--|--|--|--|--|
|         |         |     |            |      |  |  | S0222: 1, H0486: 1,<br>H0156: 1, H0599: 1,<br>H0052: 1, H0597: 1,<br>H0545: 1, H0565: 1,<br>H0563: 1, H0012: 1,<br>H0373: 1, H0266: 1,<br>H0292: 1, H0284: 1,<br>T0006: 1, H0181: 1,<br>H0617: 1, H0264: 1,<br>H0413: 1, H0059: 1,<br>H0494: 1, H0509: 1,<br>H0529: 1, L0763: 1,<br>L0770: 1, L0796: 1,<br>L0639: 1, L0646: 1,<br>L0643: 1, L0645: 1,<br>L0774: 1, L0806: 1,<br>L0519: 1, L0665: 1,<br>H0144: 1, L0438: 1,<br>L0352: 1, H0520: 1,<br>H0547: 1, S0126: 1,<br>H0658: 1, S0378: 1,<br>S0380: 1, H0521: 1,<br>H0696: 1, H0576: 1,<br>L0439: 1, L0747: 1,<br>L0750: 1, L0752: 1,<br>L0753: 1, L0731: 1 and<br>H0543: 1. |  |  |
| HISDH58 | 1016740 | 524 | 1678 - 248 | 2699 | Asp-55 to Cys-73,<br>Pro-75 to Tyr-85. |  | H0620: 1, H0130: 1<br>and H0539: 1.  |  |  |
| HSPSB62 | 1016768 | 525 | 148 - 990  | 2700 | Leu-36 to Glu-41,                      |  | S0276: 7, H0543: 6,  |  |  |



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|---------|---------|-----|-----------|------|--|--|--|--|
|         |         |     |           |      | Asp-48 to Asp-55,<br>Ser-104 to Glu-199,<br>Pro-202 to Trp-233,<br>Gly-236 to Ala-247,<br>Phe-256 to Ser-263,<br>Glu-273 to Asp-281. | S0358: 3, H0046: 3,<br>H0424: 3, L0748: 3,<br>H0265: 2, H0556: 2,<br>H0661: 2, S0420: 2,<br>H0052: 2, H0135: 2,<br>H0090: 2, H0433: 2,<br>L0752: 2, L0758: 2,<br>H0422: 2, H0657: 1,<br>H0484: 1, H0483: 1,<br>H0638: 1, S0360: 1,<br>S0132: 1, H0645: 1,<br>H0550: 1, H0391: 1,<br>T0039: 1, H0250: 1,<br>S0010: 1, H0009: 1,<br>H0123: 1, H0081: 1,<br>S0051: 1, H0428: 1,<br>H0040: 1, S0038: 1,<br>S0144: 1, H0547: 1,<br>H0593: 1, H0683: 1,<br>H0670: 1, H0518: 1,<br>H0134: 1, S0037: 1,<br>S3014: 1, S0027: 1,<br>S0032: 1, L0744: 1,<br>L0740: 1, L0746: 1,<br>L0731: 1, H0445: 1,<br>L0596: 1, S0011: 1 and<br>H0542: 1. |  |  |
| HE2FR37 | 1016939 | 526 | 109 - 729 | 2701 | Gly-1 to Met-15,<br>Met-60 to Gln-67,<br>Val-76 to Gly-82,   | AR060: 2, AR089: 2,<br>AR055: 1, AR061: 1,<br>AR096: 1, AR104: 0,  |  |  |



|         |         |     |          |      |   |  |      |  |  |
|---------|---------|-----|----------|------|---|--|------|--|--|
|         |         |     |          |      | Leu-117 to Arg-123.   | AR053: 0, AR033: 0,<br>AR039: 0<br>H0328: 2, H0124: 2,<br>L0766: 2, H0171: 1,<br>L0005: 1, S0360: 1,<br>H0329: 1, H0156: 1,<br>H0615: 1, H0477: 1,<br>S0440: 1, L0598: 1,<br>H0547: 1, S0126: 1,<br>S0168: 1 and H0595: 1.   |      |  |  |
| HBJHU33 | 1017051 | 527 | 1 - 618  | 2702 | Met-34 to Gly-50,<br>Asp-69 to Trp-90,<br>Asp-99 to Lys-107,<br>Val-164 to Thr-170. |  |      |  |  |
| HCOQZ88 | 1017227 | 528 | 3 - 1196 | 2703 | His-1 to Arg-12.  | L0748: 38, L0747: 30,<br>L0759: 7, S0360: 5,<br>L0664: 5, L0779: 5,<br>H0486: 4, S0010: 4,<br>L0758: 4, S0222: 3,<br>L0455: 3, S0386: 3,<br>L0764: 3, L0771: 3,<br>L0775: 3, L0438: 3,<br>S0028: 3, L0749: 3,<br>H0580: 2, H0208: 2,<br>H0013: 2, S0280: 2,<br>H0575: 2, H0251: 2,<br>H0024: 2, S0214: 2,<br>H0428: 2, H0622: 2,<br>H0031: 2, H0644: 2,<br>L0646: 2, L0800: 2, | 6q23 | 107470,<br>107470,<br>107470,<br>121014,<br>142470,<br>156225,<br>164200,<br>164200,<br>207800,<br>601316,<br>601410,<br>601757,<br>602067 |  |



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|--|--|--|--|--|--|--|--|
|  |  |  |  |  | L0773: 2, L0662: 2,<br>L0794: 2, L0804: 2,<br>H0521: 2, L0752: 2,<br>S0026: 2, H0583: 1,<br>H0459: 1, S0418: 1,<br>S0356: 1, H0675: 1,<br>S0045: 1, H0619: 1,<br>H0441: 1, T0039: 1,<br>T0109: 1, H0581: 1,<br>H0263: 1, H0596: 1,<br>H0232: 1, H0327: 1,<br>L0471: 1, H0057: 1,<br>H0375: 1, H0266: 1,<br>S0003: 1, H0688: 1,<br>H0553: 1, H0376: 1,<br>H0163: 1, H0090: 1,<br>H0591: 1, H0616: 1,<br>S0370: 1, S0382: 1,<br>H0529: 1, L0770: 1,<br>L0769: 1, L0638: 1,<br>L0761: 1, L0772: 1,<br>L0642: 1, L0767: 1,<br>L0768: 1, L0364: 1,<br>L0766: 1, L0606: 1,<br>L0659: 1, L0809: 1,<br>L0663: 1, H0144: 1,<br>L0565: 1, L0352: 1,<br>S0126: 1, H0682: 1,<br>H0659: 1, H0670: 1,<br>H0672: 1, L0602: 1, |  |  |
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|---------|---------|-----|------------|------|--|--|--|---|---|--|--|
|         |         |     |            |      |  |  |  | H0518: 1, S0146: 1,<br>S3014: 1, L0439: 1,<br>L0745: 1, L0750: 1,<br>L0777: 1, L0755: 1,<br>L0731: 1, H0595: 1,<br>L0596: 1, H0543: 1 and<br>H0352: 1.  |   |  |  |
| HNTSV21 | 1017374 | 529 | 673 - 1008 | 2704 | Asn-41 to Lys-46,<br>Pro-73 to Lys-92. |  |  | L0599: 2, H0265: 1,<br>S0114: 1, S0116: 1,<br>H0486: 1, H0031: 1,<br>H0090: 1, H0616: 1,<br>H0547: 1, H0670: 1,<br>L0743: 1, L0744: 1,<br>L0747: 1 and L0592: 1.  | 1 |  |  |
| HNORH33 | 1017461 | 530 | 255 - 2063 | 2705 |  |  |  | S0358: 11, L0777: 9,<br>H0046: 8, L0439: 6,<br>L0759: 6, L0438: 5,<br>L0662: 4, L0794: 4,<br>L0766: 4, S0114: 3,<br>L0803: 3, L0789: 3,<br>H0144: 3, S0126: 3,<br>L0748: 3, S0011: 3,<br>S0196: 3, H0686: 2,<br>H0250: 2, H0024: 2,<br>H0031: 2, H0628: 2,<br>H0056: 2, L0667: 2,<br>L0805: 2, L0659: 2,<br>L0809: 2, L0663: 2,<br>L0665: 2, S0328: 2,<br>H0521: 2, S3014: 2, |   |  |  |



|         |         |     |            |      |  |   |                   |                    |
|---------|---------|-----|------------|------|--|---|-------------------|--------------------|
| HUFEF35 | 1017565 | 531 | 162 - 2159 | 2706 |  | S0402: 1, S0212: 1,<br>S0348: 1, S0356: 1,<br>S0442: 1, S0360: 1,<br>S0222: 1, H0431: 1,<br>H0486: 1, H0599: 1,<br>H0581: 1, L0471: 1,<br>L0163: 1, H0201: 1,<br>S0051: 1, H0375: 1,<br>S0214: 1, H0553: 1,<br>L0142: 1, L0143: 1,<br>H0032: 1, L0455: 1,<br>H0090: 1, H0591: 1,<br>H0063: 1, H0551: 1,<br>H0623: 1, T0041: 1,<br>T0042: 1, H0561: 1,<br>H0714: 1, H0509: 1,<br>H0633: 1, L0637: 1,<br>L0761: 1, L0800: 1,<br>L0768: 1, L0650: 1,<br>L0378: 1, L0655: 1,<br>L0666: 1, H0691: 1,<br>H0435: 1, H0658: 1,<br>H0651: 1, L0744: 1,<br>L0750: 1, L0757: 1,<br>L0758: 1, L0591: 1,<br>L0599: 1, L0362: 1,<br>S0242: 1, H0542: 1,<br>H0543: 1 and H0422: 1. | 12q24.2-<br>g24.3 | 100650,<br>100650, |
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| S0194: 14, L0748: 13,<br>L0662: 12, H0553: 9,<br>L0663: 9, L0664: 8,<br>H0547: 8, H0658: 8,<br>H0506: 8, L0500: 7,<br>L0659: 7, H0486: 6,<br>L0526: 6, H0659: 6,<br>H0672: 6, S0406: 6,<br>S0434: 6, H0318: 5,<br>H0428: 5, H0412: 5,<br>L0653: 5, L0657: 5,<br>L0517: 5, H0519: 5,<br>H0170: 4, H0685: 4,<br>H0657: 4, S0358: 4,<br>H0083: 4, H0031: 4,<br>H0551: 4, S0440: 4,<br>L0770: 4, S0374: 4,<br>S0328: 4, H0696: 4,<br>H0445: 4, L0596: 4,<br>L0608: 4, H0542: 4,<br>H0624: 3, H0686: 3,<br>S6024: 3, S0356: 3,<br>S0354: 3, S0408: 3,<br>H0581: 3, H0046: 3,<br>H0510: 3, H0328: 3,<br>H0644: 3, H0038: 3,<br>T0067: 3, S0450: 3,<br>L0598: 3, L0520: 3,<br>L0646: 3, L0521: 3,<br>L0768: 3, L0375: 3, | 142410,<br>142410,<br>142410,<br>160781,<br>181405. |
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| L0655: 3, L0493: 3,<br>S0126: 3, H0521: 3,<br>L0439: 3, L0754: 3,<br>L0757: 3, L0588: 3,<br>H0543: 3, S0114: 2,<br>H0663: 2, S0442: 2,<br>H0580: 2, L0717: 2,<br>S0222: 2, T0060: 2,<br>L0040: 2, L0471: 2,<br>H0266: 2, H0687: 2,<br>H0165: 2, H0068: 2,<br>H0413: 2, T0041: 2,<br>H0560: 2, H0509: 2,<br>S0210: 2, L0369: 2,<br>L0638: 2, L0637: 2,<br>L0364: 2, L0775: 2,<br>L0776: 2, L0527: 2,<br>L0656: 2, L0518: 2,<br>L0519: 2, H0520: 2,<br>H0435: 2, S0330: 2,<br>H0539: 2, H0704: 2,<br>H0436: 2, L0751: 2,<br>L0747: 2, L0752: 2,<br>L0589: 2, L0605: 2,<br>L0599: 2, L0595: 2,<br>L0362: 2, L0448: 1,<br>S0342: 1, T0049: 1,<br>S0134: 1, H0650: 1,<br>L0760: 1, S0212: 1,<br>H0661: 1, H0664: 1, |  |  |  |  |  |
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| H0449: 1, S0376: 1,<br>S0444: 1, H0637: 1,<br>H0329: 1, H0351: 1,<br>H0437: 1, H0369: 1,<br>H0431: 1, H0455: 1,<br>H0586: 1, H0642: 1,<br>H0643: 1, L0586: 1,<br>H0013: 1, H0575: 1,<br>T0048: 1, H0235: 1,<br>H0596: 1, H0545: 1,<br>L0163: 1, S0051: 1,<br>T0010: 1, H0375: 1,<br>T0023: 1, L0483: 1,<br>H0628: 1, H0617: 1,<br>H0166: 1, H0674: 1,<br>H0708: 1, H0040: 1,<br>H0616: 1, H0087: 1,<br>H0488: 1, H0059: 1,<br>S0039: 1, H0494: 1,<br>H0561: 1, S0464: 1,<br>S0438: 1, H0633: 1,<br>H0647: 1, S0002: 1,<br>H0529: 1, L0451: 1,<br>L0501: 1, L0667: 1,<br>L0630: 1, L0772: 1,<br>L0374: 1, L0773: 1,<br>L0648: 1, L0766: 1,<br>L0649: 1, L0381: 1,<br>L0499: 1, L0497: 1,<br>L0522: 1, L0803: 1, |  |
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|         |         |     |           |      |   |  |  |  |
|---------|---------|-----|-----------|------|---|--|--|--|
| HISBM03 | 1017772 | 533 | 748 - 924 | 2708 | Pro-2 to Leu-8,<br>Phe-12 to Arg-20,<br>Thr-32 to Lys-38. | L0776: 2, L0666: 2,<br>L0665: 2, L0758: 2,<br>L0759: 2, H0392: 1,<br>H0581: 1, L0471: 1,<br>H0083: 1, H0687: 1,<br>S0003: 1, L0769: 1,<br>L0639: 1, L0648: 1,<br>L0375: 1, L0657: 1,<br>L0659: 1, L0518: 1,<br>H0659: 1 and L0777: 1.  |  |  |
|         |         |     |           |      |   | L0766: 25, L0439: 20,<br>L0438: 16, L0758: 11,<br>L0747: 9, L0731: 9,<br>L0794: 8, L0805: 8,<br>L0748: 8, L0752: 7,<br>L0759: 7, H0038: 6,<br>L0769: 6, L0809: 6,<br>L0750: 6, L0777: 6,<br>L0757: 6, L0592: 6,<br>L0770: 5, L0803: 5,<br>L0749: 5, L0593: 5,<br>H0581: 4, L0774: 4,<br>L0776: 4, H0435: 4,<br>H0521: 4, L0740: 4,<br>L0754: 4, H0305: 3,<br>S0418: 3, H0013: 3,<br>H0318: 3, S0003: 3,<br>H0616: 3, H0412: 3,<br>H0413: 3, S0422: 3,<br>L0800: 3, L0771: 3. |  |  |



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|  | L0775: 3, L0789: 3,<br>L0791: 3, L0665: 3,<br>H0539: 3, L0744: 3,<br>L0745: 3, L0595: 3,<br>S0026: 3, H0556: 2,<br>H0717: 2, S0116: 2,<br>S0045: 2, S0046: 2,<br>S0476: 2, H0586: 2,<br>H0574: 2, S0010: 2,<br>S0049: 2, H0052: 2,<br>H0620: 2, H0687: 2,<br>H0553: 2, L0455: 2,<br>S0366: 2, H0090: 2,<br>H0591: 2, H0494: 2,<br>S0150: 2, L0761: 2,<br>L0772: 2, L0381: 2,<br>L0807: 2, L0518: 2,<br>L0666: 2, H0519: 2,<br>H0648: 2, S0328: 2,<br>S0330: 2, S0152: 2,<br>L0743: 2, L0751: 2,<br>L0756: 2, L0779: 2,<br>L0753: 2, L0755: 2,<br>S0436: 2, L0605: 2,<br>L0362: 2, H0668: 2,<br>H0170: 1, H0171: 1,<br>H0265: 1, T0002: 1,<br>T0049: 1, H0650: 1,<br>H0662: 1, L0005: 1,<br>S0356: 1, S0442: 1, |  |
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|  | S0358: 1, S0408: 1,<br>H0580: 1, H0733: 1,<br>S0132: 1, H0619: 1,<br>S0278: 1, H0261: 1,<br>H0600: 1, H0642: 1,<br>H0632: 1, H0559: 1,<br>H0486: 1, H0156: 1,<br>H0274: 1, H0196: 1,<br>H0596: 1, H0327: 1,<br>H0530: 1, H0046: 1,<br>H0123: 1, H0050: 1,<br>H0012: 1, H0049: 1,<br>H0024: 1, H0014: 1,<br>H0015: 1, S0051: 1,<br>T0010: 1, H0083: 1,<br>H0594: 1, H0615: 1,<br>H0688: 1, H0031: 1,<br>L0142: 1, H0111: 1,<br>H0032: 1, H0212: 1,<br>T0067: 1, H0433: 1,<br>H0100: 1, T0042: 1,<br>L0475: 1, S0438: 1,<br>S0142: 1, S0208: 1,<br>S0002: 1, L0369: 1,<br>L0763: 1, L0667: 1,<br>L0646: 1, L0764: 1,<br>L0773: 1, L0768: 1,<br>L0650: 1, L0656: 1,<br>L0659: 1, L0783: 1,<br>L0367: 1, L0787: 1, |  |
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|         |         |     |           |      |   |  |   |        |   |
|---------|---------|-----|-----------|------|---|--|---|--------|---|
|         |         |     |           |      |   |  | L0790: 1, L0792: 1,<br>L0663: 1, H0144: 1,<br>L0352: 1, H0547: 1,<br>S0126: 1, H0658: 1,<br>H0670: 1, H0696: 1,<br>H0134: 1, S0406: 1,<br>H0626: 1, S3012: 1,<br>S0390: 1, L0786: 1,<br>H0595: 1, S0434: 1,<br>L0599: 1, H0653: 1,<br>H0667: 1, S0192: 1,<br>H0542: 1, H0543: 1,<br>H0422: 1, S0042: 1 and<br>S0424: 1. |        |   |
| HOFAA79 | 1017801 | 534 | 2 - 559   | 2709 | Ala-15 to Asp-26,<br>Phe-108 to Trp-113,<br>Glu-167 to Tyr-175. |  | AR089: 17, AR039:<br>16, AR096: 16, AR053:<br>16, AR052: 13, AR033:<br>12, AR060: 11, AR055:<br>8, AR104: 7, AR061:<br>6<br>H0415: 1 and H0414:<br>1.   | 11     |   |
| HPRAJ96 | 1017825 | 535 | 587 - 429 | 2710 |   |  | L0740: 21, L0748: 14,<br>L0731: 10, L0747: 9,<br>L0752: 9, L0757: 7,<br>H0674: 6, L0750: 6,<br>S0358: 5, L0768: 5,<br>L0809: 5, H0648: 5,<br>L0779: 5, H0318: 4,<br>L0766: 4, L0776: 4,   | 1p36.1 | 116600,<br>120550,<br>120570, --<br>120575,<br>130500,<br>133200,<br>171760,<br>171760, |



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|--|--|--|--|--|------------------------------|
|  |  |  |  | H0402: 3, H0486: 3,<br>H0617: 3, L0662: 3,<br>L0775: 3, L0375: 3,<br>L0754: 3, H0543: 3,<br>H0170: 2, H0686: 2,<br>H0125: 2, S0360: 2,<br>S0222: 2, H0333: 2,<br>T0060: 2, H0250: 2,<br>H0156: 2, H0263: 2,<br>H0123: 2, H0024: 2,<br>L0483: 2, H0644: 2,<br>H0090: 2, H0551: 2,<br>H0412: 2, L0763: 2,<br>L0772: 2, L0803: 2,<br>L0774: 2, L0805: 2,<br>L0659: 2, L0783: 2,<br>L0543: 2, S0126: 2,<br>H0435: 2, H0672: 2,<br>L0751: 2, L0777: 2,<br>L0758: 2, L0759: 2,<br>H0444: 2, L0599: 2,<br>L0604: 2, S0194: 2,<br>H0423: 2, H0422: 2,<br>H0352: 2, H0624: 1,<br>H0295: 1, S0114: 1,<br>T0049: 1, H0650: 1,<br>H0657: 1, H0638: 1,<br>L0005: 1, S0376: 1,<br>S0410: 1, H0637: 1,<br>S0045: 1, S0046: 1. | 185470,<br>255800,<br>600975 |
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|  | S0132: 1, S0278: 1,<br>H0431: 1, T0040: 1,<br>T0109: 1, H0069: 1,<br>L0021: 1, H0042: 1,<br>H0575: 1, S0346: 1,<br>S0474: 1, H0251: 1,<br>H0085: 1, T0115: 1,<br>S0050: 1, S0051: 1,<br>H0083: 1, H0356: 1,<br>H0266: 1, H0188: 1,<br>H0428: 1, H0032: 1,<br>H0169: 1, H0591: 1,<br>H0634: 1, H0063: 1,<br>T0067: 1, H0272: 1,<br>H0413: 1, S0038: 1,<br>H0100: 1, H0641: 1,<br>S0142: 1, S0344: 1,<br>H0538: 1, H0695: 1,<br>L0371: 1, L0637: 1,<br>L0646: 1, L0764: 1,<br>L0648: 1, L0794: 1,<br>L0653: 1, L0526: 1,<br>L0782: 1, L0666: 1,<br>L0663: 1, L0665: 1,<br>S0428: 1, H0520: 1,<br>H0659: 1, H0670: 1,<br>H0651: 1, S0328: 1,<br>L0602: 1, H0518: 1,<br>H0696: 1, S3014: 1,<br>S0027: 1, L0749: 1, |  |
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|---------|---------|-----|----------|------|--|--|--|---|--|--|--|
|         |         |     |          |      |  |  |  | L0588: 1, L0591: 1,<br>L0593: 1, S0026: 1 and<br>S0384: 1.  |  |  |  |
| HBXFX71 | 1018032 | 536 | 1 - 123  | 2711 |  | Pro-1 to Ser-6,<br>Pro-9 to Pro-16,<br>Pro-34 to Leu-41.   |  | H0549: 5, L0769: 5,<br>L0157: 4, L0742: 3,<br>S0010: 2, H0620: 2,<br>S0051: 2, H0617: 2,<br>H0483: 1, H0661: 1,<br>S0420: 1, S0045: 1,<br>H0411: 1, H0550: 1,<br>H0370: 1, H0438: 1,<br>H0434: 1, H0545: 1,<br>H0615: 1, S0112: 1,<br>H0494: 1, L0770: 1,<br>L0364: 1, L0783: 1,<br>L0809: 1, L0666: 1,<br>H0547: 1, H0682: 1,<br>H0672: 1, L0779: 1,<br>L0758: 1 and L0592: 1. |  |  |  |
| HMVDD81 | 1018080 | 537 | 14 - 745 | 2712 |  | Arg-8 to Gly-17,<br>Gly-29 to Pro-45,<br>Arg-62 to Leu-84,<br>Gln-87 to Leu-96,<br>Glu-103 to Val-114,<br>Gln-141 to Cys-153,<br>Ile-162 to Glu-180,<br>Arg-186 to Lys-211,<br>Asn-219 to Asn-<br>228. |  | H0694: 92, L0747: 14,<br>L0766: 13, L0764: 7,<br>S0126: 7, L0439: 7,<br>L0758: 7, L0759: 7,<br>H0657: 6, H0656: 6,<br>S0358: 6, H0266: 6,<br>L0763: 6, L0776: 6,<br>L0655: 6, L0659: 6,<br>L0666: 6, L0748: 6,<br>L0777: 6, L0752: 6,<br>H0445: 6, H0486: 5,  |  |  |  |



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|  | H0013: 5, H0622: 5,<br>H0038: 5, H0623: 5,<br>L0649: 5, L0805: 5,<br>H0547: 5, L0749: 5,<br>L0750: 5, S0476: 4,<br>H0497: 4, H0036: 4,<br>S0422: 4, L0598: 4,<br>H0529: 4, L0662: 4,<br>L0775: 4, L0809: 4,<br>L0663: 4, H0144: 4,<br>H0659: 4, H0658: 4,<br>H0521: 4, S0434: 4,<br>L0581: 4, H0717: 3,<br>S0212: 3, S0444: 3,<br>H0574: 3, H0004: 3,<br>H0328: 3, H0615: 3,<br>H0644: 3, H0551: 3,<br>H0494: 3, L0770: 3,<br>L0768: 3, L0657: 3,<br>L0665: 3, S0374: 3,<br>H0670: 3, S0330: 3,<br>L0731: 3, S0436: 3,<br>H0265: 2, H0738: 2,<br>S0116: 2, H0341: 2,<br>H0638: 2, S0360: 2,<br>H0580: 2, S0045: 2,<br>H0393: 2, L0717: 2,<br>H0549: 2, S0414: 2,<br>H0485: 2, S0280: 2,<br>H0156: 2, S0010: 2, |  |
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|  | H0032: 2, S0440: 2,<br>H0646: 2, L0667: 2,<br>L0646: 2, L0774: 2,<br>L0652: 2, L0518: 2,<br>L0438: 2, H0682: 2,<br>H0660: 2, H0539: 2,<br>S0380: 2, H0518: 2,<br>H0696: 2, S0044: 2,<br>S0406: 2, H0555: 2,<br>H0436: 2, L0744: 2,<br>L0751: 2, L0757: 2,<br>L0592: 2, L0608: 2,<br>L0593: 2, H0653: 2,<br>S0194: 2, S0276: 2,<br>H0543: 2, H0423: 2,<br>S0424: 2, L0411: 1,<br>H0624: 1, H0170: 1,<br>H0556: 1, H0220: 1,<br>H0686: 1, H0685: 1,<br>S0114: 1, T0049: 1,<br>H0583: 1, H0650: 1,<br>H0254: 1, H0255: 1,<br>S0356: 1, S0442: 1,<br>S0354: 1, S0408: 1,<br>H0722: 1, S0132: 1,<br>H0619: 1, H0437: 1,<br>S6022: 1, S0222: 1,<br>H0431: 1, H0592: 1,<br>H0586: 1, H0333: 1,<br>H0349: 1, L0105: 1, |  |
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|---------|---------|-----|----------------|------|--|---|------|---|
| HVVDH50 | 1018226 | 538 | 2344 -<br>1004 | 2713 | Pro-18 to Ser-40,<br>Pro-81 to Pro-95,<br>Pro-111 to Phe-118,<br>Gly-127 to Ala-132,<br>Pro-143 to Phe-151,<br>Pro-164 to Pro-174,<br>Pro-180 to Lys-187,<br>Met-205 to Phe-211,<br>Phe-228 to Pro-236,<br>Pro-245 to Pro-255,<br>Ala-263 to His-270,<br>Gln-272 to Gln-280,<br>Asn-296 to Ala-304,<br>Gly-333 to Gly-344, | L0793: 1, L0664: 1,<br>H0520: 1, H0519: 1,<br>H0593: 1, H0689: 1,<br>H0672: 1, H0651: 1,<br>S0378: 1, S0152: 1,<br>S0350: 1, H0522: 1,<br>S0013: 1, H0704: 1,<br>H0576: 1, S0390: 1,<br>S0027: 1, L0756: 1,<br>L0779: 1, L0780: 1,<br>L0755: 1, H0595: 1,<br>L0596: 1, L0588: 1,<br>L0589: 1, L0366: 1,<br>S0011: 1, S0026: 1,<br>H0665: 1, L0600: 1,<br>H0008: 1 and H0352: 1,<br>L0751: 17, L0731: 11,<br>S0344: 9, S0126: 9,<br>L0743: 9, L0595: 9,<br>S0046: 8, S0002: 8,<br>H0521: 8, L0744: 8,<br>S0278: 7, S0037: 7,<br>L0750: 7, S0420: 6,<br>H0618: 6, H0024: 6,<br>H0188: 6, H0622: 6,<br>S3014: 6, L0439: 6,<br>H0550: 5, H0620: 5,<br>H0551: 5, H0623: 5,<br>L0659: 5, H0255: 4,<br>S0418: 4, H0052: 4, | 7q32 | 180105,<br>190900,<br>222800,<br>246900 |
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|  |  |  |  |  | <p>Thr-353 to Ser-360,<br/>Gln-365 to Val-379,<br/>Pro-381 to Arg-390,<br/>Glu-418 to Gln-423,<br/>Leu-438 to Ser-445.</p> | <p>S0142: 4, S0426: 4,<br/>L0663: 4, H0435: 4,<br/>S0027: 4, L0742: 4,<br/>L0754: 4, L0758: 4,<br/>H0265: 3, H0556: 3,<br/>S0040: 3, S0212: 3,<br/>S0045: 3, H0599: 3,<br/>H0253: 3, T0048: 3,<br/>H0266: 3, H0271: 3,<br/>S0250: 3, H0494: 3,<br/>S0440: 3, H0641: 3,<br/>S0144: 3, L0646: 3,<br/>L0662: 3, L0775: 3,<br/>L0809: 3, L0749: 3,<br/>L0777: 3, L0752: 3,<br/>H0542: 3, T0002: 2,<br/>H0295: 2, H0662: 2,<br/>H0306: 2, S0356: 2,<br/>S0442: 2, S0360: 2,<br/>H0580: 2, H0393: 2,<br/>S0222: 2, H0592: 2,<br/>H0559: 2, T0039: 2,<br/>H0013: 2, H0250: 2,<br/>S0280: 2, H0575: 2,<br/>H0581: 2, H0597: 2,<br/>H0544: 2, H0545: 2,<br/>H0046: 2, H0179: 2,<br/>H0252: 2, H0039: 2,<br/>H0030: 2, H0628: 2,<br/>H0617: 2, H0124: 2,</p> |  |  |
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|  | H0056: 2, T0041: 2,<br>T0042: 2, S0210: 2,<br>H0695: 2, H0529: 2,<br>L0769: 2, L0643: 2,<br>L0764: 2, L0766: 2,<br>L0653: 2, L0658: 2,<br>H0519: 2, H0690: 2,<br>H0670: 2, H0539: 2,<br>L0602: 2, L0748: 2,<br>L0745: 2, L0747: 2,<br>L0759: 2, L0593: 2,<br>H0665: 2, H0667: 2,<br>H0543: 2, H0422: 2,<br>L0600: 2, H0186: 1,<br>H0713: 1, H0716: 1,<br>S6024: 1, H0583: 1,<br>H0657: 1, H0254: 1,<br>H0661: 1, H0402: 1,<br>H0638: 1, L0534: 1,<br>S0408: 1, S0007: 1,<br>H0208: 1, H0619: 1,<br>H0351: 1, H0261: 1,<br>H0549: 1, H0392: 1,<br>H0438: 1, H0586: 1,<br>H0333: 1, H0486: 1,<br>H0635: 1, H0427: 1,<br>H0156: 1, S0474: 1,<br>H0309: 1, H0204: 1,<br>H0546: 1, L0041: 1,<br>H0009: 1, H0178: 1, |  |  |
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|  | H0123: 1, H0050: 1,<br>L0471: 1, H0012: 1,<br>H0023: 1, S0051: 1,<br>H0071: 1, H0083: 1,<br>H0416: 1, H0288: 1,<br>H0292: 1, T0006: 1,<br>H0644: 1, H0181: 1,<br>S0364: 1, H0068: 1,<br>H0135: 1, H0038: 1,<br>H0040: 1, H0634: 1,<br>H0063: 1, H0087: 1,<br>H0077: 1, H0269: 1,<br>H0412: 1, T0004: 1,<br>S0038: 1, H0100: 1,<br>L0065: 1, H0647: 1,<br>L0369: 1, L0640: 1,<br>L0763: 1, L0667: 1,<br>L0648: 1, L0363: 1,<br>L0767: 1, L0768: 1,<br>L0649: 1, L0774: 1,<br>L0376: 1, L0378: 1,<br>L0654: 1, L0776: 1,<br>L0655: 1, L0657: 1,<br>L0634: 1, L0783: 1,<br>L0382: 1, L0532: 1,<br>L0666: 1, L0665: 1,<br>S0052: 1, H0699: 1,<br>H0693: 1, L0438: 1,<br>H0593: 1, H0683: 1,<br>H0672: 1, S0328: 1, |  |
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|---------|---------|-----|----------------|------|---|---|-------|------------------------------|--|
|         |         |     |                |      |   | S0330: 1, H0518: 1,<br>H0696: 1, S0406: 1,<br>H0555: 1, S0432: 1,<br>S0118: 1, S3012: 1,<br>S0390: 1, S0206: 1,<br>L0740: 1, L0757: 1,<br>S0031: 1, S0434: 1,<br>L0596: 1, S0194: 1,<br>S0424: 1, H0506: 1 and<br>H0008: 1.   |       |                              |  |
| HNNBT57 | 1018243 | 539 | 377 - 3        | 2714 | Pro-9 to Ala-24,<br>Thr-52 to Gly-61,<br>Thr-64 to Ser-70.  | H0677: 7  |       |                              |  |
| HCONJ11 | 1018459 | 540 | 1937 -<br>1125 | 2715 | His-11 to Ala-17,<br>Pro-29 to Ser-35,<br>Asn-59 to Asp-64,<br>Lys-67 to Leu-72,<br>Gln-101 to Asp-110,<br>Pro-157 to Lys-176,<br>Gln-181 to Lys-210,<br>Gln-213 to Lys-228,<br>Pro-253 to Asn-264. | H0581: 3, H0615: 3,<br>L0766: 3, L0777: 3,<br>H0657: 2, H0486: 2,<br>H0013: 2, H0641: 2,<br>L0803: 2, S0011: 2,<br>H0543: 2, H0423: 2,<br>H0556: 1, H0341: 1,<br>S0420: 1, S0356: 1,<br>H0580: 1, H0586: 1,<br>H0575: 1, S0049: 1,<br>H0263: 1, H0545: 1,<br>H0150: 1, H0041: 1,<br>H0009: 1, L0471: 1,<br>H0014: 1, S0051: 1,<br>S0003: 1, H0328: 1,<br>H0622: 1, H0032: 1,<br>H0674: 1, H0038: 1, | 10q23 | 174900,<br>236730,<br>601493 |  |



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|---------|---------|-----|----------------|------|--|--|---|---|--|--|
|         |         |     |                |      |  |  | H0616: 1, H0551: 1,<br>T0041: 1, S0440: 1,<br>S0422: 1, L0598: 1,<br>H0529: 1, L0520: 1,<br>L0640: 1, L0770: 1,<br>L0794: 1, L0774: 1,<br>L0776: 1, L0655: 1,<br>L0540: 1, L0789: 1,<br>L0792: 1, L0663: 1,<br>L0665: 1, S0374: 1,<br>H0520: 1, H0547: 1,<br>H0689: 1, H0659: 1,<br>H0670: 1, H0666: 1,<br>S0380: 1, H0696: 1,<br>L0742: 1, L0439: 1,<br>L0754: 1, L0590: 1,<br>L0599: 1, H0542: 1,<br>L0718: 1 and L0600: 1. |   |  |  |
| HCQAW68 | 1018501 | 541 | 1652 -<br>1212 | 2716 | Asn-19 to Ile-26,<br>Val-44 to Lys-54,<br>Arg-70 to Val-83,<br>Arg-95 to Thr-100,<br>Arg-136 to Arg-141. | L0748: 4, L0777: 4,<br>L0756: 2, H0263: 1,<br>H0046: 1, H0023: 1,<br>H0188: 1, L0761: 1,<br>L0662: 1, L0526: 1,<br>L0790: 1, L0747: 1 and<br>L0758: 1. |   |   |  |  |
| HVVCY25 | 1018772 | 542 | 1170 - 355     | 2717 | Ser-7 to Trp-12,<br>Pro-28 to Gly-58,<br>Lys-212 to Cys-218,<br>Glu-229 to Gly-235.                      | H0547: 10, H0542: 10,<br>H0266: 9, L0794: 7,<br>S0358: 6, H0559: 6,<br>L0803: 6, L0666: 6,<br>L0601: 6, H0013: 5,                                      | 19p13.3-<br>p13.2   | 108725,<br>120700,<br>133171,<br>136836,<br>143890, |  |  |



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| H0696: 2, H0555: 2,<br>H0436: 2, S0027: 2,<br>L0439: 2, L0779: 2,<br>S0434: 2, L0596: 2,<br>H0136: 2, H0543: 2,<br>H0423: 2, L0600: 2,<br>H0624: 1, H0171: 1,<br>H0685: 1, H0583: 1,<br>H0650: 1, H0656: 1,<br>S0116: 1, S0212: 1,<br>S0282: 1, H0484: 1,<br>H0255: 1, H0662: 1,<br>H0638: 1, H0125: 1,<br>S0418: 1, S0420: 1,<br>S0356: 1, S0376: 1,<br>S0132: 1, H0437: 1,<br>H0261: 1, H0549: 1,<br>H0370: 1, L0586: 1,<br>H0069: 1, T0048: 1,<br>H0196: 1, H0052: 1,<br>H0204: 1, H0545: 1,<br>H0009: 1, H0566: 1,<br>H0081: 1, H0050: 1,<br>H0012: 1, T0003: 1,<br>H0373: 1, S0388: 1,<br>T0010: 1, H0375: 1,<br>H0687: 1, L0483: 1,<br>H0031: 1, H0553: 1,<br>H0644: 1, H0628: 1,<br>H0617: 1, H0606: 1, |  |
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|---------|---------|-----|------------|------|---|---------|--|
| HCOMB65 | 1018802 | 543 | 233 - 1249 | 2718 | H0068: 1, H0090: 1,<br>H0591: 1, H0063: 1,<br>H0412: 1, H0396: 1,<br>H0561: 1, S0372: 1,<br>H0509: 1, S0422: 1,<br>L0770: 1, L0637: 1,<br>L0667: 1, L0646: 1,<br>L0800: 1, L0641: 1,<br>L0764: 1, L0773: 1,<br>L0662: 1, L0363: 1,<br>L0768: 1, L0387: 1,<br>L0804: 1, L0378: 1,<br>L0806: 1, L0655: 1,<br>L0657: 1, L0636: 1,<br>S0216: 1, H0698: 1,<br>L0438: 1, H0593: 1,<br>H0670: 1, H0660: 1,<br>H0648: 1, H0651: 1,<br>S0328: 1, S0378: 1,<br>H0518: 1, H0704: 1,<br>H0134: 1, H0478: 1,<br>S3014: 1, S0028: 1,<br>L0748: 1, L0755: 1,<br>L0592: 1, S0011: 1,<br>H0665: 1, H0667: 1 and<br>S0242: 1. | 22q13.1 | 103050,<br>103050,<br>124030,<br>124030, |
|---------|---------|-----|------------|------|---|---------|--|



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| H0486: 5, H0551: 5,<br>S0142: 5, L0769: 5,<br>L0744: 5, L0740: 5,<br>L0751: 5, L0731: 5,<br>H0542: 5, H0556: 4,<br>H0295: 4, H0271: 4,<br>H0412: 4, L0764: 4,<br>L0771: 4, L0666: 4,<br>S0126: 4, H0521: 4,<br>H0584: 3, H0650: 3,<br>S0420: 3, S0360: 3,<br>S0132: 3, H0581: 3,<br>H0039: 3, H0040: 3,<br>S0344: 3, L0667: 3,<br>L0774: 3, L0663: 3,<br>L0664: 3, H0144: 3,<br>H0660: 3, H0648: 3,<br>H0436: 3, L0749: 3,<br>L0779: 3, H0265: 2,<br>T0002: 2, H0686: 2,<br>H0294: 2, S0212: 2,<br>H0254: 2, S0418: 2,<br>S0045: 2, S0046: 2,<br>S0140: 2, H0599: 2,<br>H0150: 2, H0510: 2,<br>H0266: 2, S0003: 2,<br>H0090: 2, H0100: 2,<br>L0564: 2, H0625: 2,<br>H0633: 2, L0763: 2,<br>L0648: 2, L0767: 2, | 138981,<br>182380,<br>188826,<br>190040,<br>190040,<br>190040 |
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| H0687: 1, H0290: 1,<br>H0028: 1, S0214: 1,<br>H0688: 1, H0428: 1,<br>T0023: 1, H0213: 1,<br>H0553: 1, H0644: 1,<br>H0111: 1, H0617: 1,<br>H0165: 1, L0456: 1,<br>S0036: 1, H0264: 1,<br>H0413: 1, T0004: 1,<br>H0509: 1, H0641: 1,<br>H0647: 1, H0646: 1,<br>S0208: 1, S0210: 1,<br>L0520: 1, L0770: 1,<br>L0638: 1, L0637: 1,<br>L0761: 1, L0642: 1,<br>L0773: 1, L0521: 1,<br>L0768: 1, L0803: 1,<br>L0775: 1, L0784: 1,<br>L0378: 1, L0653: 1,<br>L0654: 1, L0555: 1,<br>L0655: 1, L0807: 1,<br>L0656: 1, L0635: 1,<br>L0517: 1, L0384: 1,<br>L0367: 1, L0790: 1,<br>S0374: 1, S0310: 1,<br>H0520: 1, H0519: 1,<br>H0690: 1, H0684: 1,<br>H0659: 1, S0330: 1,<br>S0378: 1, H0518: 1,<br>S0044: 1, S3012: 1, |  |
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|         |         |     |            |      |  |  | S0037: 1, S3014: 1,<br>L0750: 1, L0780: 1,<br>S0260: 1, L0591: 1,<br>S0011: 1, S0026: 1,<br>H0653: 1, H0667: 1,<br>H0136: 1, H0216: 1,<br>S0192: 1, S0276: 1 and<br>H0677: 1.   |  |  |  |
| HVVCF30 | 1018907 | 544 | 50 - 319   | 2719 | Pro-13 to Ala-20,<br>Pro-53 to Ser-61. |  |   |  |  |  |
| HODBV21 | 1018943 | 545 | 1186 - 476 | 2720 |  |  | H0328: 2  |  |  |  |
| HCHMD81 | 1019326 | 546 | 1 - 1005   | 2721 | Ala-4 to Ala-11.                       |  | L0758: 9, L0770: 7,<br>H0620: 6, L0731: 6,<br>L0747: 5, L0777: 5,<br>H0265: 4, L0771: 4,<br>L0748: 4, L0759: 4,<br>L0769: 3, L0662: 3,<br>L0774: 3, L0526: 3,<br>L0439: 3, L0751: 3,<br>L0750: 3, S0358: 2,<br>H0424: 2, S0144: 2,<br>L0520: 2, L0764: 2,<br>L0364: 2, L0776: 2,<br>L0809: 2, L0664: 2,<br>L0754: 2, S0436: 2,<br>L0588: 2, L0601: 2,<br>H0556: 1, H0685: 1,<br>S0040: 1, S6024: 1,<br>H0341: 1, H0484: 1,<br>H0661: 1, H0306: 1, |  |  |  |



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| S0418: 1, S0442: 1,<br>S0354: 1, S0278: 1,<br>H0550: 1, H0486: 1,<br>H0069: 1, H0156: 1,<br>H0575: 1, H0706: 1,<br>S0474: 1, H0263: 1,<br>H0009: 1, H0571: 1,<br>H0242: 1, L0471: 1,<br>H0012: 1, H0266: 1,<br>H0428: 1, T0006: 1,<br>H0644: 1, H0313: 1,<br>H0551: 1, H0477: 1,<br>H0264: 1, H0494: 1,<br>H0131: 1, H0538: 1,<br>L0772: 1, L0374: 1,<br>L0766: 1, L0388: 1,<br>L0378: 1, L0653: 1,<br>L0655: 1, L0657: 1,<br>L0659: 1, L0384: 1,<br>L0789: 1, L0666: 1,<br>L0665: 1, H0144: 1,<br>S0374: 1, H0547: 1,<br>H0593: 1, S0126: 1,<br>H0435: 1, H0670: 1,<br>H0672: 1, H0539: 1,<br>H0710: 1, S0406: 1,<br>L0611: 1, S0037: 1,<br>S3014: 1, S0028: 1,<br>S0032: 1, L0786: 1 and<br>S0434: 1. |  |  |  |  |  |
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|---------|---------|-----|-----------|------|--|---|-------|--|
| HAZAR95 | 1019338 | 547 | 11 - 1192 | 2722 | Arg-63 to Arg-77,<br>Glu-186 to Trp-192,<br>Ile-222 to Tyr-228,<br>Lys-284 to Glu-293,<br>Asn-324 to Ser-329,<br>Pro-375 to Lys-388. | L0666: 13, L0665: 13,<br>L0588: 12, L0601: 9,<br>S0358: 8, L0664: 8,<br>S0360: 7, L0471: 7,<br>L0657: 7, L0659: 7,<br>L0748: 7, H0415: 6,<br>S0214: 6, L0520: 6,<br>L0372: 6, L0803: 6,<br>L0375: 6, L0655: 6,<br>H0659: 6, L0608: 6,<br>L0362: 6, L0361: 6,<br>S0376: 5, L0663: 5,<br>L0439: 5, T0049: 4,<br>H0581: 4, L0646: 4,<br>L0804: 4, L0809: 4,<br>S0328: 4, L0747: 4,<br>L0749: 4, L0755: 4,<br>L0731: 4, L0591: 4,<br>L0604: 4, L0595: 4,<br>H0542: 4, H0662: 3,<br>H0545: 3, H0687: 3,<br>H0100: 3, H0509: 3,<br>H0529: 3, L0763: 3,<br>L0764: 3, L0662: 3,<br>L0794: 3, S0330: 3,<br>L0740: 3, H0445: 3,<br>L0600: 3, H0265: 2,<br>H0661: 2, S0418: 2,<br>H0156: 2, H0318: 2,<br>H0172: 2, H0620: 2, | L2q23 | 124200,<br>147440,<br>160781,<br>235800,<br>600175 |
|---------|---------|-----|-----------|------|--|---|-------|--|



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| H0051: 2, T0010: 2,<br>H0510: 2, T0006: 2,<br>H0617: 2, H0674: 2,<br>H0413: 2, S0344: 2,<br>L0598: 2, L0369: 2,<br>L0637: 2, L0648: 2,<br>L0626: 2, L0363: 2,<br>L0768: 2, L0775: 2,<br>L0651: 2, L0378: 2,<br>L0383: 2, S0122: 2,<br>H0690: 2, H0670: 2,<br>H0648: 2, S0380: 2,<br>H0626: 2, L0744: 2,<br>L0777: 2, L0752: 2,<br>L0757: 2, L0758: 2,<br>L0596: 2, L0592: 2,<br>L0593: 2, H0665: 2,<br>H0543: 2, S0424: 2,<br>H0170: 1, H0686: 1,<br>H0685: 1, S0342: 1,<br>S0134: 1, H0657: 1,<br>H0341: 1, H0663: 1,<br>H0306: 1, S0356: 1,<br>S0442: 1, S0354: 1,<br>S0444: 1, S0408: 1,<br>S0468: 1, S0045: 1,<br>H0411: 1, S0278: 1,<br>H0370: 1, H0392: 1,<br>H0587: 1, L0622: 1,<br>H0486: 1, T0039: 1, |
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| T0060: 1, H0427: 1,<br>H0599: 1, H0004: 1,<br>S0346: 1, H0196: 1,<br>H0052: 1, H0263: 1,<br>H0544: 1, T0003: 1,<br>H0083: 1, H0629: 1,<br>S6028: 1, H0188: 1,<br>S0003: 1, H0428: 1,<br>H0039: 1, H0030: 1,<br>H0553: 1, H0165: 1,<br>H0169: 1, S0036: 1,<br>H0135: 1, H0551: 1,<br>H0264: 1, H0412: 1,<br>T0069: 1, L0475: 1,<br>S0370: 1, L0065: 1,<br>S0438: 1, H0647: 1,<br>H0649: 1, S0422: 1,<br>S0426: 1, L0762: 1,<br>L0371: 1, L0770: 1,<br>L0769: 1, L0638: 1,<br>L0761: 1, L0641: 1,<br>L0642: 1, L0773: 1,<br>L0521: 1, L0387: 1,<br>L0766: 1, L0649: 1,<br>L0774: 1, L0807: 1,<br>L0517: 1, L0540: 1,<br>L0526: 1, L0384: 1,<br>L0382: 1, L0530: 1,<br>L0647: 1, L0787: 1,<br>L0532: 1, S0374: 1, |  |  |  |  |  |
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|---------|---------|-----|----------|------|--|--|---|--|--|--|
|         |         |     |          |      |  |  | L0565: 1, H0691: 1,<br>L0438: 1, H0547: 1,<br>H0519: 1, H0365: 1,<br>H0689: 1, H0684: 1,<br>H0658: 1, H0660: 1,<br>H0666: 1, S0332: 1,<br>H0522: 1, S0013: 1,<br>H0696: 1, H0704: 1,<br>S0044: 1, S0404: 1,<br>H0436: 1, S0432: 1,<br>S3012: 1, S0027: 1,<br>S0206: 1, L0779: 1,<br>L0759: 1, L0683: 1,<br>S0434: 1, L0589: 1,<br>L0590: 1, L0599: 1,<br>S0026: 1, H0653: 1,<br>H0667: 1, H0423: 1 and<br>H0352: 1. |  |  |  |
| HMWFS51 | 1019409 | 548 | 65 - 484 | 2723 |  |  | L0776: 3, H0341: 2,<br>L0005: 2, T0023: 2,<br>L0766: 2, L0527: 2,<br>L0659: 2, L0809: 2,<br>L0665: 2, L0748: 2,<br>L0740: 2, L0747: 2,<br>L0731: 2, L0362: 2,<br>S0114: 1, H0305: 1,<br>S0376: 1, H0393: 1,<br>H0574: 1, H0013: 1,<br>H0263: 1, H0266: 1,<br>H0688: 1, L0483: 1,  |  |  |  |



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|---------|---------|-----|-----------|------|--|---|---|--|--|
|         |         |     |           |      |  |   | H0030: 1, H0674: 1,<br>H0647: 1, L0763: 1,<br>L0646: 1, L0374: 1,<br>L0662: 1, L0768: 1,<br>L0774: 1, L0663: 1,<br>L0438: 1, H0520: 1,<br>H0658: 1, S0328: 1,<br>H0478: 1, L0745: 1,<br>L0758: 1, H0445: 1 and<br>L0599: 1. |  |  |
| HE8SD82 | 1019585 | 549 | 1 - 570   | 2724 | Asn-1 to Pro-7,<br>Glu-33 to Ser-40,<br>Pro-54 to Thr-63,<br>Leu-82 to Arg-106,<br>Gly-109 to Asn-119,<br>Glu-145 to Val-150,<br>Lys-161 to Gln-168,<br>Arg-170 to Phe-175,<br>Thr-177 to Tyr-184. | H0031: 4, S0007: 2,<br>H0244: 2, S0010: 2,<br>H0194: 2, H0553: 2,<br>S0036: 2, H0040: 2,<br>H0529: 2, L0005: 1,<br>S0356: 1, H0676: 1,<br>H0411: 1, S0222: 1,<br>S6014: 1, H0587: 1,<br>H0497: 1, H0013: 1,<br>H0575: 1, H0327: 1,<br>L0471: 1, H0024: 1,<br>L0143: 1, H0038: 1,<br>H0494: 1, H0538: 1,<br>H0660: 1, H0539: 1,<br>H0521: 1, H0555: 1 and<br>H0136: 1. |   |  |  |
| HSPSN08 | 1019608 | 550 | 77 - 1120 | 2725 | Pro-25 to Glu-54,<br>Ser-66 to Glu-71,<br>Gly-86 to Trp-92,<br>Arg-104 to Asn-109,   | H0683: 11, H0617: 3,<br>L0766: 2, H0686: 1,<br>H0254: 1, H0255: 1,<br>L0021: 1, H0123: 1,   |   |  |  |



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|---------|---------|-----|-----------|------|--|---|--|--|
|         |         |     |           |      | Asn-133 to Asn-138,<br>Thr-153 to Ser-160,<br>Asn-269 to Glu-277,<br>Leu-290 to Tyr-297. | H0012: 1, S0051: 1,<br>H0083: 1, H0039: 1,<br>T0006: 1, H0413: 1,<br>L0794: 1, L0809: 1,<br>L0748: 1 and S0026: 1.  |  |  |
| HVCAH24 | 1019749 | 551 | 97 - 468  | 2726 | Arg-1 to Arg-8,<br>Gly-30 to Gln-40,<br>Phe-50 to Asp-58,<br>Leu-97 to Ser-112.          | H0156: 2, H0624: 1,<br>H0171: 1, H0686: 1,<br>H0656: 1, H0574: 1,<br>H0486: 1, S0316: 1,<br>H0622: 1, H0038: 1,<br>S0150: 1, H0520: 1,<br>H0547: 1, H0658: 1,<br>H0666: 1, H0521: 1 and<br>S0028: 1.  |  |  |
| HCEBF54 | 1019777 | 552 | 400 - 840 | 2727 | Pro-89 to Leu-101.   | AR104: 2, AR061: 1,<br>AR089: 1, AR033: 0,<br>AR060: 0, AR096: 0,<br>AR053: 0, AR039: 0,<br>AR055: 0, AR052: 0<br>L0794: 2, L0803: 2,<br>L0655: 2, L0665: 2,<br>H0684: 2, L0754: 2,<br>L0747: 2, H0686: 1,<br>L0470: 1, H0662: 1,<br>H0125: 1, S0360: 1,<br>L0021: 1, H0052: 1,<br>H0085: 1, H0597: 1,<br>H0009: 1, S0362: 1,<br>H0644: 1, H0673: 1,<br>L0060: 1, H0560: 1, |  |  |



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|---------|---------|-----|-----------|------|--|---|--|--|--|--|
|         |         |     |           |      |  | L0638: 1, L0761: 1,<br>L0373: 1, L0765: 1,<br>L0774: 1, L0805: 1,<br>L0809: 1, L0790: 1,<br>L0666: 1, L0664: 1,<br>H0689: 1, H0682: 1,<br>H0660: 1, L0742: 1,<br>L0748: 1, S0434: 1,<br>L0592: 1, L0608: 1,<br>L0601: 1, H0542: 1 and<br>H0423: 1.  |  |  |  |  |
| HPQAD21 | 1019869 | 553 | 176 - 271 | 2728 |  | S0136: 115, L0803: 9,<br>S0026: 9, L0731: 8,<br>H0624: 6, S0418: 6,<br>S0358: 6, L0805: 6,<br>H0619: 5, L0666: 5,<br>L0439: 5, L0754: 5,<br>L0756: 5, H0170: 4,<br>S0360: 4, H0553: 4,<br>L0662: 4, H0547: 4,<br>L0750: 4, L0779: 4,<br>H0351: 3, H0486: 3,<br>H0046: 3, H0050: 3,<br>L0471: 3, H0266: 3,<br>H0623: 3, L0770: 3,<br>H0144: 3, H0520: 3,<br>S0380: 3, S0040: 2,<br>H0295: 2, H0661: 2,<br>S0420: 2, S0376: 2,<br>H0722: 2, H0369: 2, |  |  |  |  |



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|--|--|--|--|--|--|--|
|  | H0592: 2, H0574: 2,<br>H0575: 2, H0051: 2,<br>S0022: 2, H0615: 2,<br>H0032: 2, S0438: 2,<br>S0440: 2, L0598: 2,<br>L0769: 2, L0774: 2,<br>L0776: 2, L0659: 2,<br>L0518: 2, L0663: 2,<br>H0726: 2, S0126: 2,<br>H0539: 2, H0696: 2,<br>H0555: 2, L0740: 2,<br>L0747: 2, L0753: 2,<br>L0593: 2, H0686: 1,<br>S0212: 1, H0484: 1,<br>H0671: 1, H0662: 1,<br>S0356: 1, S0442: 1,<br>S0354: 1, S0444: 1,<br>S0476: 1, H0645: 1,<br>S0222: 1, H0441: 1,<br>H0586: 1, H0587: 1,<br>H0333: 1, H0632: 1,<br>H0013: 1, S0280: 1,<br>L0021: 1, H0599: 1,<br>H0590: 1, H0309: 1,<br>L0040: 1, H0544: 1,<br>H0545: 1, H0019: 1,<br>S0051: 1, H0275: 1,<br>H0375: 1, S6028: 1,<br>S0250: 1, H0328: 1,<br>H0428: 1, H0031: 1, |  |  |  |  |  |
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|---------|---------|-----|-----------|------|-------------------|---|--|--|
| HJPCF71 | 1019892 | 554 | 219 - 830 | 2729 | Asp-41 to Gly-56. | H0111: 1, H0628: 1,<br>S0364: 1, H0135: 1,<br>H0616: 1, H0551: 1,<br>H0268: 1, H0100: 1,<br>H0494: 1, H0652: 1,<br>S0210: 1, L0763: 1,<br>L5566: 1, L0646: 1,<br>L0800: 1, L0764: 1,<br>L0771: 1, L0768: 1,<br>L0649: 1, L0804: 1,<br>L0775: 1, L0806: 1,<br>L0527: 1, L0636: 1,<br>L0783: 1, L0790: 1,<br>S0296: 1, H0693: 1,<br>H0519: 1, H0690: 1,<br>H0682: 1, H0684: 1,<br>H0648: 1, H0672: 1,<br>S0454: 1, S0013: 1,<br>H0626: 1, H0627: 1,<br>S0028: 1, L0744: 1,<br>L0777: 1, L0755: 1,<br>L0757: 1, L0758: 1,<br>L0759: 1, S0434: 1,<br>S0436: 1, L0592: 1,<br>H0667: 1, S0194: 1 and<br>H0506: 1. |  |  |
|         |         |     |           |      |                   | L0439: 4, L0777: 4,<br>S0214: 3, L0752: 3,<br>H0686: 2, H0486: 2,<br>L0775: 2, L0651: 2,  |  |  |



|         |         |     |           |      |  |
|---------|---------|-----|-----------|------|--|
| HVCAE76 | 1019942 | 555 | 99 - 2111 | 2730 | <p>L0750: 2, S0114: 1,<br/>H0656: 1, S0212: 1,<br/>H0663: 1, H0586: 1,<br/>H0546: 1, H0024: 1,<br/>H0083: 1, H0510: 1,<br/>H0428: 1, H0038: 1,<br/>H0560: 1, H0646: 1,<br/>L0763: 1, L0773: 1,<br/>L0662: 1, L0774: 1,<br/>L0378: 1, L0661: 1,<br/>L0384: 1, L0789: 1,<br/>L0666: 1, L0438: 1,<br/>S0028: 1, L0747: 1,<br/>L0756: 1, L0758: 1,<br/>H0423: 1 and S0460: 1.</p> <p>L0779: 7, L0439: 5,<br/>H0624: 4, L0766: 4,<br/>L0438: 4, H0657: 3,<br/>L0662: 3, L0657: 3,<br/>L0666: 3, S0360: 2,<br/>L0764: 2, L0655: 2,<br/>L0532: 2, L0664: 2,<br/>S0428: 2, H0670: 2,<br/>L0777: 2, L0755: 2,<br/>L0731: 2, H0423: 2,<br/>L0465: 2, H0170: 1,<br/>L0002: 1, H0583: 1,<br/>S0400: 1, H0589: 1,<br/>L0481: 1, S0354: 1,<br/>S0358: 1, S0408: 1,</p> |
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| HOCMH14 | 1020007 | 556 | 1 - 1485 | 2731 | His-3 to Trp-8,<br>Glu-16 to Gly-23,<br>Tyr-47 to Gly-56. | H0351: 1, H0411: 1,<br>H0550: 1, H0333: 1,<br>S0280: 1, H0098: 1,<br>H0122: 1, H0318: 1,<br>H0581: 1, H0263: 1,<br>H0457: 1, H0566: 1,<br>H0050: 1, S0050: 1,<br>H0051: 1, H0188: 1,<br>H0687: 1, H0615: 1,<br>H0039: 1, L0055: 1,<br>H0598: 1, H0040: 1,<br>S0440: 1, H0529: 1,<br>L0761: 1, L0667: 1,<br>L0363: 1, L0768: 1,<br>L0649: 1, L0804: 1,<br>L0776: 1, L0661: 1,<br>L0659: 1, L0809: 1,<br>L0663: 1, L0665: 1,<br>L0352: 1, H0547: 1,<br>H0690: 1, H0666: 1,<br>H0648: 1, H0555: 1,<br>H0436: 1, S0390: 1,<br>S0028: 1, L0744: 1,<br>L0740: 1, L0747: 1,<br>L0752: 1, L0753: 1,<br>L0759: 1, S0031: 1 and<br>L0605: 1. |  |  |
|         |         |     |          |      |   | H0457: 7, L0743: 5,<br>L0439: 5, L0751: 5,<br>L0752: 5, L0731: 4,  |  |  |



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|---|--|
| Ala-88 to Cys-93,<br>Ala-108 to Ser-139,<br>Ser-145 to Ser-151,<br>Asp-154 to Ala-164,<br>Pro-168 to Thr-189,<br>Pro-196 to Ser-203,<br>Pro-229 to Ala-235,<br>Thr-255 to Glu-261,<br>Pro-271 to Pro-276,<br>Pro-289 to Asn-310,<br>Pro-318 to Tyr-329,<br>Arg-334 to Arg-345,<br>Arg-347 to Thr-356,<br>Lys-373 to Arg-391,<br>Glu-396 to Pro-414. | H0618: 3, H0253: 3,<br>H0545: 3, L0662: 3,<br>H0689: 3, L0748: 3,<br>L0777: 3, L0758: 3,<br>L0785: 2, H0692: 2,<br>H0662: 2, H0550: 2,<br>S0049: 2, L0770: 2,<br>L0764: 2, L0659: 2,<br>H0670: 2, L0779: 2,<br>L0757: 2, L0759: 2,<br>S0434: 2, H0225: 1,<br>S0218: 1, H0650: 1,<br>H0656: 1, L0426: 1,<br>S0212: 1, S0442: 1,<br>H0489: 1, H0580: 1,<br>S0046: 1, S0132: 1,<br>S0476: 1, H0549: 1,<br>H0587: 1, H0333: 1,<br>H0559: 1, H0427: 1,<br>L0021: 1, H0599: 1,<br>H0274: 1, H0581: 1,<br>H0421: 1, H0052: 1,<br>H0231: 1, L0157: 1,<br>H0566: 1, H0123: 1,<br>T0010: 1, H0408: 1,<br>H0355: 1, H0266: 1,<br>H0271: 1, H0687: 1,<br>H0163: 1, H0087: 1,<br>H0494: 1, H0359: 1,<br>S0344: 1, L0371: 1. |
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|---------|---------|-----|-----------|------|--|---|--|--|
| HPDRZ03 | 1020130 | 557 | 122 - 751 | 2732 | Asp-7 to Ala-15,<br>Pro-34 to Ile-60,<br>Gln-110 to Asn-117. | L0637: 1, L0761: 1,<br>L0646: 1, L0773: 1,<br>L0363: 1, L0774: 1,<br>L0375: 1, L0805: 1,<br>L0658: 1, L0384: 1,<br>L0543: 1, L0666: 1,<br>L0663: 1, H0547: 1,<br>H0593: 1, H0684: 1,<br>H0660: 1, S0380: 1,<br>H0710: 1, S0152: 1,<br>H0521: 1, H0696: 1,<br>H0134: 1, S0406: 1,<br>H0436: 1, S0432: 1,<br>L0744: 1, L0740: 1,<br>S0436: 1, L0593: 1,<br>H0665: 1 and H0422: 1. |  |  |
|         |         |     |           |      |  | L0777: 4, S0358: 3,<br>H0486: 3, L0750: 3,<br>L0779: 3, L0752: 3,<br>S0412: 3, S0134: 2,<br>H0013: 2, L0766: 2,<br>L0803: 2, H0519: 2,<br>H0658: 2, L0599: 2,<br>L0604: 2, S0192: 2,<br>T0002: 1, S0342: 1,<br>S0212: 1, H0661: 1,<br>H0619: 1, H0411: 1,<br>H0632: 1, T0114: 1,<br>H0575: 1, H0318: 1,<br>T0110: 1, H0544: 1.  |  |  |



|         |         |     |                |      |  |  |  |  |  |  |
|---------|---------|-----|----------------|------|--|--|--|--|--|--|
| HOCPO73 | 1020180 | 558 | 3745 -<br>2963 | 2733 |  |  |  | H0457: 1, H0328: 1,<br>L0055: 1, H0169: 1,<br>T0067: 1, S0422: 1,<br>L0763: 1, L0773: 1,<br>L0363: 1, L0804: 1,<br>L0806: 1, L0663: 1,<br>H0648: 1, S0152: 1,<br>L0751: 1, L0756: 1,<br>L0755: 1, L0731: 1,<br>L0758: 1, L0593: 1,<br>L0594: 1, H0665: 1,<br>H0543: 1 and S0424: 1.  |  |  |
|         |         |     |                |      |  |  |  | L0777: 7, L0759: 5,<br>L0638: 3, L0766: 3,<br>L0804: 3, L0663: 3,<br>L0439: 3, H0657: 2,<br>L0055: 2, L0666: 2,<br>H0660: 2, L0604: 2,<br>L0615: 1, S0358: 1,<br>L0471: 1, H0628: 1,<br>H0038: 1, S0344: 1,<br>H0529: 1, L0761: 1,<br>L0630: 1, L0646: 1,<br>L0764: 1, L0364: 1,<br>L0803: 1, L0805: 1,<br>L0655: 1, L0809: 1,<br>L0790: 1, L0532: 1,<br>H0689: 1, H0435: 1,<br>H0658: 1, S0330: 1,<br>H0521: 1, H0436: 1, |  |  |



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|         |         |     |           |      |  |  |   |  |  |
|---------|---------|-----|-----------|------|--|--|---|--|--|
|         |         |     |           |      |  |  | L0375: 1, L0651: 1,<br>L0784: 1, L0806: 1,<br>L0509: 1, L0655: 1,<br>L0657: 1, L0513: 1,<br>L0809: 1, L0545: 1,<br>L0790: 1, L0791: 1,<br>L0792: 1, L0664: 1,<br>H0144: 1, H0519: 1,<br>S0126: 1, S0404: 1,<br>H0555: 1, L0751: 1,<br>L0777: 1, S0436: 1 and<br>L0592: 1. |  |  |
| HWHGO25 | 1020841 | 560 | 3 - 113   | 2735 | Gly-7 to Leu-15,<br>Pro-17 to His-29.  |  | L0747: 5, L0805: 3,<br>L0761: 2, L0803: 2,<br>L0775: 2, H0658: 2,<br>L0758: 2, S0298: 1,<br>H0586: 1, H0597: 1,<br>L0646: 1, L0776: 1,<br>L0518: 1, L0519: 1,<br>L0528: 1, L0529: 1,<br>L0790: 1, L0666: 1,<br>H0690: 1, H0521: 1,<br>L0749: 1 and L0777: 1.              |  |  |
| HWMNE31 | 1020852 | 561 | 157 - 681 | 2736 | Thr-15 to Trp-23,<br>Ala-44 to Gln-51,<br>Lys-62 to Arg-70,<br>Asp-102 to Lys-114,<br>Val-116 to Ala-148,<br>Phe-151 to Glu-163. |  | L0803: 13, L0766: 10,<br>L0731: 8, L0751: 6,<br>L0601: 6, L0756: 5,<br>L0764: 4, L0789: 4,<br>S0136: 4, H0436: 4,<br>L0777: 4, L0596: 4,<br>H0556: 3, H0580: 3,   |  |  |



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|         |         |     |         |      |  |   |  |  |  |  |
|---------|---------|-----|---------|------|--|---|--|--|--|--|
|         |         |     |         |      |  | H0622: 1, H0673: 1,<br>L0456: 1, H0163: 1,<br>H0591: 1, H0040: 1,<br>H0551: 1, T0067: 1,<br>H0412: 1, H0560: 1,<br>H0647: 1, S0142: 1,<br>S0208: 1, S0422: 1,<br>H0695: 1, L0369: 1,<br>L0520: 1, L0763: 1,<br>L0770: 1, L0638: 1,<br>L0771: 1, L0794: 1,<br>L0774: 1, L0651: 1,<br>L0378: 1, L0776: 1,<br>L0657: 1, L0809: 1,<br>L0532: 1, L0663: 1,<br>L0664: 1, L0665: 1,<br>H0144: 1, H0725: 1,<br>H0659: 1, H0666: 1,<br>H0518: 1, H0521: 1,<br>S0013: 1, H0696: 1,<br>S0406: 1, S3014: 1,<br>S0027: 1, L0754: 1,<br>L0749: 1, L0752: 1,<br>L0757: 1, S0260: 1,<br>L0592: 1, S0026: 1,<br>S0276: 1, H0542: 1,<br>H0423: 1, H0422: 1 and<br>H0721: 1. |  |  |  |  |
| HUSYJ75 | 1020878 | 562 | 1 - 420 | 2737 |  | H0484: 35, L0751: 15;<br>L0758: 12, H0483: 10,  |  |  |  |  |



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|--|--|--|--|--|--|--|--|
|  | H0592: 2, H0052: 2,<br>L0157: 2, H0688: 2,<br>H0606: 2, H0674: 2,<br>H0059: 2, H0100: 2,<br>L0763: 2, L0771: 2,<br>L0649: 2, L0633: 2,<br>L0383: 2, H0520: 2,<br>H0435: 2, H0658: 2,<br>H0648: 2, H0436: 2,<br>S0390: 2, L0748: 2,<br>L0777: 2, L0731: 2,<br>L0757: 2, L0759: 2,<br>S0260: 2, H0686: 1,<br>S6024: 1, H0294: 1,<br>S0134: 1, H0657: 1,<br>H0656: 1, S0180: 1,<br>S0212: 1, H0254: 1,<br>S0418: 1, S0354: 1,<br>S0410: 1, H0722: 1,<br>S0045: 1, S0132: 1,<br>H0393: 1, H0550: 1,<br>H0587: 1, H0333: 1,<br>T0109: 1, H0101: 1,<br>H0427: 1, H0575: 1,<br>H0706: 1, T0048: 1,<br>S0474: 1, H0581: 1,<br>S0049: 1, H0309: 1,<br>H0597: 1, H0231: 1,<br>H0009: 1, H0178: 1,<br>H0567: 1, H0024: 1, |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|



|         |         |     |          |      |  |   |  |  |  |
|---------|---------|-----|----------|------|--|---|--|--|--|
|         |         |     |          |      |  | H0051: 1, H0099: 1,<br>H0594: 1, H0188: 1,<br>S0214: 1, H0604: 1,<br>H0417: 1, H0181: 1,<br>H0673: 1, H0551: 1,<br>H0412: 1, H0413: 1,<br>H0494: 1, H0334: 1,<br>S0150: 1, S0426: 1,<br>H0529: 1, L0373: 1,<br>L0374: 1, L0764: 1,<br>L0385: 1, L0774: 1,<br>L0375: 1, L0654: 1,<br>L0657: 1, L0659: 1,<br>L5623: 1, L0368: 1,<br>L0665: 1, H0702: 1,<br>H0519: 1, H0683: 1,<br>S0328: 1, S0330: 1,<br>H0539: 1, S0378: 1,<br>H0522: 1, S0037: 1,<br>S0028: 1, S0206: 1,<br>L0754: 1, L0750: 1,<br>H0445: 1, H0595: 1,<br>L0591: 1, L0361: 1,<br>L0601: 1, S0192: 1,<br>H0542: 1, H0423: 1 and<br>S0456: 1. |  |  |  |
| HSDFS07 | 1020904 | 563 | 2 - 1018 | 2738 | Glu-1 to Asn-6,<br>Glu-14 to Leu-19,<br>Pro-22 to Ile-30,<br>Ser-32 to Asp-40, | L0439: 5, L0777: 4,<br>H0244: 2, S0010: 2,<br>S0386: 2, L0764: 2,<br>L0776: 2, L0809: 2,  |  |  |  |



|         |         |     |           |                   |  |   |  |  |
|---------|---------|-----|-----------|-------------------|--|---|--|--|
|         |         |     |           | Ser-44 to Gln-53. | H0519: 2, L0756: 2,<br>L0780: 2, H0369: 1,<br>S0222: 1, S0346: 1,<br>H0050: 1, H0428: 1,<br>L0194: 1, L0455: 1,<br>H0494: 1, L0769: 1,<br>L0806: 1, L0807: 1,<br>L0664: 1, H0520: 1,<br>L0747: 1, L0779: 1,<br>L0759: 1, S0031: 1 and<br>L0592: 1. |   |  |  |
| HCOPC09 | 1021208 | 564 | 620 - 378 | 2739              | Glu-49 to Asn-62.  | L0764: 3, S0360: 2,<br>H0331: 2, H0575: 2,<br>L0769: 2, H0670: 2,<br>L0747: 2, L0777: 2,<br>L0601: 2, S0358: 1,<br>H0455: 1, H0492: 1,<br>L0021: 1, L0763: 1,<br>L0662: 1, L0803: 1,<br>L0774: 1, L0775: 1,<br>L0809: 1, H0683: 1,<br>H0522: 1, L0743: 1,<br>L0362: 1 and H0422: 1. |  |  |
| HVVBT22 | 1021323 | 565 | 811 - 2   | 2740              | Pro-5 to Lys-15,<br>Asn-31 to Ala-38,<br>Asp-57 to Arg-64,<br>Ala-75 to Asp-90,<br>Gln-98 to Gly-123,<br>Arg-125 to Gly-142,<br>Met-155 to Gly-160,  | H0424: 5, L0766: 3,<br>S0222: 2, S0214: 2,<br>S0422: 2, S0126: 2,<br>S0330: 2, L0759: 2,<br>L0362: 2, L0361: 2,<br>H0653: 2, H0220: 1,<br>H0656: 1, H0341: 1,   |  |  |



|         |         |     |         |      |  |   |  |  |
|---------|---------|-----|---------|------|--|---|--|--|
|         |         |     |         |      | Leu-162 to Pro-182,<br>Arg-187 to Met-192,<br>Ser-199 to Asp-219,<br>Pro-224 to Pro-253. | H0449: 1, S0376: 1,<br>S0045: 1, H0351: 1,<br>H0587: 1, H0497: 1,<br>S0010: 1, L0471: 1,<br>H0373: 1, H0083: 1,<br>H0266: 1, L0055: 1,<br>H0163: 1, H0591: 1,<br>H0551: 1, H0366: 1,<br>H0509: 1, H0538: 1,<br>L0770: 1, L0772: 1,<br>L0381: 1, L0775: 1,<br>L0653: 1, L0518: 1,<br>L0665: 1, H0144: 1,<br>H0520: 1, H0547: 1,<br>H0689: 1, H0672: 1,<br>S0328: 1, H0539: 1,<br>H0696: 1, L0747: 1,<br>L0752: 1, L0591: 1,<br>L0592: 1, H0216: 1 and<br>S0396: 1. |  |  |
| HAMFW66 | 1021327 | 566 | 8 - 988 | 2741 | His-3 to Phe-9,<br>Asn-176 to Thr-184,<br>Glu-217 to Lys-225,<br>Lys-263 to Asp-268.     | AR053: 3, AR052: 3,<br>AR096: 2, AR033: 2,<br>AR089: 2, AR055: 2,<br>AR104: 1, AR060: 1,<br>AR061: 0, AR039: 0,<br>L0754: 12, S0410: 10,<br>L0766: 9, L0591: 7,<br>L0748: 4, L0752: 4,<br>H0423: 4, H0556: 3,<br>S0360: 3, L0646: 3,  |  |  |



[illegible]



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|---------|---------|-----|-----------|------|--|--|---|-------|------------------------------|--|
|         |         |     |           |      |  |  | L0792: 1, L0793: 1,<br>H0519: 1, H0682: 1,<br>H0648: 1, S0330: 1,<br>S0152: 1, S0406: 1,<br>L0750: 1, L0779: 1,<br>L0757: 1, L0759: 1,<br>L0480: 1, H0542: 1 and<br>H0506: 1. |       |                              |  |
| HPMBW86 | 1021661 | 567 | 3 - 179   | 2742 | Leu-2 to Gly-15,<br>Val-31 to Gly-40,<br>Gly-45 to Ala-51.   |  | H0341: 1, S0222: 1,<br>H0156: 1, H0052: 1,<br>H0031: 1, L0766: 1,<br>H0658: 1, H0670: 1 and<br>L0612: 1.  |       |                              |  |
| HOFMK02 | 1021666 | 568 | 138 - 230 | 2743 | Thr-24 to Leu-29.  |  | H0415: 2 and H0486:<br>1.   | 11p15 | 108985,<br>186921,<br>602092 |  |
| HOUHK71 | 1021682 | 569 | 311 - 370 | 2744 | Arg-11 to Trp-20.  |  | L0755: 4, H0638: 2,<br>S0342: 1, H0101: 1,<br>H0457: 1, H0051: 1,<br>L0768: 1, L0803: 1,<br>L0650: 1, L0806: 1,<br>L0518: 1, H0689: 1,<br>H0648: 1, L0756: 1 and<br>L0759: 1. |       |                              |  |
| HCOOW23 | 1021759 | 570 | 54 - 800  | 2745 | Thr-10 to Arg-16,<br>Arg-21 to Ser-31,<br>Asn-97 to Arg-102,<br>Ile-170 to Ser-175,<br>Thr-207 to Gly-213. |  |   |       |                              |  |
| HACMT02 | 1021794 | 571 | 272 - 3   | 2746 |  |  | H0685: 2  |       |                              |  |



|         |         |     |                |      |  |  |  |  |
|---------|---------|-----|----------------|------|--|--|--|--|
| HISDS67 | 1022018 | 572 | 2322 -<br>1756 | 2747 | Gln-4 to Ala-17,<br>Ala-56 to Gln-61,<br>Cys-166 to Ala-182. | L0754: 8, H0553: 4,<br>L0770: 4, L0794: 4,<br>H0615: 3, L0769: 3,<br>L0803: 3, L0439: 3,<br>L0777: 3, L0752: 3,<br>H0052: 2, L0637: 2,<br>L0768: 2, L0805: 2,<br>L0659: 2, L0666: 2,<br>L0664: 2, H0547: 2,<br>H0593: 2, H0682: 2,<br>H0539: 2, H0521: 2,<br>L0744: 2, L0757: 2,<br>L0604: 2, L0601: 2,<br>H0624: 1, H0657: 1,<br>H0656: 1, S0212: 1,<br>H0254: 1, H0662: 1,<br>L0005: 1, S0045: 1,<br>H0619: 1, H0550: 1,<br>H0592: 1, H0013: 1,<br>H0036: 1, H0618: 1,<br>H0620: 1, H0023: 1,<br>S0051: 1, H0188: 1,<br>H0028: 1, H0428: 1,<br>T0006: 1, H0213: 1,<br>L0455: 1, H0135: 1,<br>H0038: 1, H0616: 1,<br>H0264: 1, H0413: 1,<br>T0069: 1, S0038: 1,<br>H0100: 1, L0763: 1,<br>L0638: 1, L5565: 1, |  |  |
|---------|---------|-----|----------------|------|--|--|--|--|



|         |         |     |                |      |  |  |  |  |
|---------|---------|-----|----------------|------|--|--|--|--|
| HOVAA59 | 1022037 | 573 | 2892 -<br>1309 | 2748 | Pro-1 to Gly-10,<br>Pro-20 to Gly-34,<br>Pro-36 to Gly-45,<br>Ala-51 to Pro-65,<br>Val-78 to Arg-83,<br>Gln-89 to Gly-98,<br>Lys-114 to Val-119,<br>Arg-158 to Ala-164,<br>Thr-306 to Lys-313. | L0761: 1, L0667: 1,<br>L0804: 1, L0650: 1,<br>L0375: 1, L0776: 1,<br>L0807: 1, L0809: 1,<br>L0519: 1, L0663: 1,<br>L0665: 1, H0520: 1,<br>S0126: 1, H0684: 1,<br>H0435: 1, H0659: 1,<br>H0648: 1, S0190: 1,<br>S0404: 1, H0555: 1,<br>L0741: 1, L0751: 1,<br>L0747: 1, L0753: 1 and<br>L0758: 1.   |  |  |
|         |         |     |                |      |  | L0601: 4, H0617: 3,<br>L0794: 2, L0629: 2,<br>L0657: 2, L0604: 2,<br>T0049: 1, S0218: 1,<br>L0785: 1, S0442: 1,<br>H0733: 1, H0411: 1,<br>T0109: 1, H0428: 1,<br>H0673: 1, S0366: 1,<br>H0040: 1, H0616: 1,<br>L0763: 1, L0375: 1,<br>L0805: 1, L0658: 1,<br>H0593: 1, H0658: 1,<br>H0672: 1, L0743: 1,<br>L0744: 1, L0748: 1,<br>L0740: 1, L0751: 1,<br>L0754: 1, L0750: 1,<br>L0596: 1, L0485: 1 and |  |  |



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| HOCPL72 | 1022059 | 574 | 2 - 1099 | 2749 | Pro-1 to Glu-14,<br>Pro-26 to Val-33,<br>Tyr-167 to Tyr-174,<br>Pro-188 to Ser-196.  | H0721: 1.<br>L0766: 3, H0457: 2,<br>H0706: 1, H0015: 1,<br>H0373: 1, H0266: 1,<br>H0553: 1, H0551: 1,<br>H0509: 1, L0761: 1,<br>L0665: 1, H0144: 1,<br>H0689: 1, H0660: 1 and<br>S0328: 1.   |  |  |
| HCOMM05 | 1022082 | 575 | 1 - 840  | 2750 | Gln-19 to Asp-38,<br>Pro-46 to Thr-55,<br>Leu-96 to Gly-104,<br>Ala-114 to Ala-119,<br>Gln-125 to Trp-131,<br>Pro-133 to Pro-141,<br>Phe-144 to Glu-150,<br>Glu-180 to Val-185,<br>Glu-192 to Glu-197,<br>Glu-254 to Leu-262,<br>Met-272 to Ser-280. | AR089: 1, AR096: 1,<br>AR061: 1, AR060: 1,<br>AR033: 1, AR055: 0,<br>AR052: 0, AR039: 0,<br>AR104: 0<br>L0508: 9, H0620: 7,<br>L0774: 6, L0509: 6,<br>S0408: 5, L0750: 5,<br>L0601: 5, L0515: 4,<br>L0512: 4, H0594: 3,<br>L0805: 3, L0514: 3,<br>L0511: 3, H0670: 3,<br>L0755: 3, H0556: 2,<br>H0686: 2, S0358: 2,<br>S0444: 2, H0199: 2,<br>H0181: 2, H0617: 2,<br>H0494: 2, L0505: 2,<br>L0502: 2, L0769: 2,<br>L0803: 2, L0809: 2,<br>L0528: 2, L0663: 2,<br>L0752: 2, H0657: 1, |  |  |



|        |         |     |         |      |   |  |         |  |
|--------|---------|-----|---------|------|---|--|---------|--|
| HLDC86 | 1022162 | 576 | 3 - 947 | 2751 | Pro-39 to Arg-45,<br>Arg-52 to Ile-60,<br>Glu-87 to Cys-96,<br>Thr-108 to Ser-114,<br>Thr-121 to Glu-128. | H0255: 1, S0420: 1,<br>S0442: 1, S0360: 1,<br>H0549: 1, H0586: 1,<br>L0021: 1, H0036: 1,<br>H0052: 1, H0597: 1,<br>H0086: 1, H0012: 1,<br>S0336: 1, H0606: 1,<br>H0124: 1, L0504: 1,<br>L0763: 1, L0627: 1,<br>L0373: 1, L0764: 1,<br>L0499: 1, L0498: 1,<br>L0497: 1, L0376: 1,<br>L0653: 1, L0493: 1,<br>L0510: 1, L0513: 1,<br>L0384: 1, L0789: 1,<br>L0666: 1, L0665: 1,<br>H0689: 1, H0660: 1,<br>H0672: 1, S0328: 1,<br>S0330: 1, S0454: 1,<br>S0406: 1, S0432: 1,<br>L0754: 1, L0747: 1,<br>L0749: 1, L0779: 1,<br>L0777: 1, L0731: 1,<br>L0759: 1, S0434: 1 and<br>H0506: 1. | 14q24.3 | 104311,<br>109150,<br>182600,<br>245200,<br>601208 |
|--------|---------|-----|---------|------|---|--|---------|--|



|         |         |     |            |      |   |   |  |  |
|---------|---------|-----|------------|------|---|---|--|--|
|         |         |     |            |      | Met-133 to Thr-141,<br>Asn-154 to Ala-169,<br>Glu-174 to His-179,<br>Gln-205 to Gln-213,<br>Pro-222 to Phe-231,<br>Ser-259 to Phe-265,<br>Leu-282 to Ser-288. | L0747: 1.   |  |  |
| HTLEP21 | 1022167 | 577 | 92 - 457   | 2752 |   | H0253: 1 and L0767:<br>1.   |  |  |
| HVCAS77 | 1022313 | 578 | 170 - 1072 | 2753 | Glu-7 to Leu-18,<br>Glu-75 to Arg-80,<br>Gln-152 to Gln-157,<br>Gln-202 to Lys-219,<br>Ser-259 to Gly-266,<br>Glu-277 to His-287.                             | L0766: 7, L0769: 6,<br>S0418: 4, L0747: 4,<br>S0424: 3, H0341: 2,<br>S0278: 2, L0471: 2,<br>H0083: 2, H0538: 2,<br>L0770: 2, L0771: 2,<br>L0775: 2, L0809: 2,<br>H0520: 2, L0744: 2,<br>L0754: 2, L0777: 2,<br>L0759: 2, L0597: 2,<br>S0026: 2, H0667: 2,<br>H0171: 1, H0686: 1,<br>S0212: 1, H0125: 1,<br>S0420: 1, S0358: 1,<br>S0376: 1, S0360: 1,<br>S0046: 1, H0393: 1,<br>H0333: 1, H0575: 1,<br>H0581: 1, H0309: 1,<br>H0046: 1, H0567: 1,<br>H0188: 1, H0428: 1,<br>H0553: 1, H0135: 1, |  |  |



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|---------|---------|-----|-----------|------|--|---|--|--|
| HOGCA79 | 1022627 | 579 | 210 - 635 | 2754 | Thr-69 to Phe-77,<br>Asp-80 to Thr-85. | H0040: 1, T0041: 1,<br>L0369: 1, L0763: 1,<br>L0643: 1, L0764: 1,<br>L0773: 1, L0804: 1,<br>L0375: 1, L0806: 1,<br>L0776: 1, L0655: 1,<br>L0783: 1, L0382: 1,<br>L0666: 1, H0144: 1,<br>H0593: 1, H0435: 1,<br>H0659: 1, H0660: 1,<br>H0666: 1, L0750: 1,<br>L0755: 1, L0731: 1,<br>L0757: 1 and H0543: 1.<br>H0547: 5, L0747: 4,<br>L0766: 3, H0328: 2,<br>H0551: 2, L0774: 2,<br>H0435: 2, H0659: 2,<br>H0436: 2, L0740: 2,<br>L0754: 2, L0759: 2,<br>L0596: 2, H0657: 1,<br>H0341: 1, S0418: 1,<br>S0360: 1, S0007: 1,<br>H0229: 1, H0486: 1,<br>H0013: 1, H0156: 1,<br>H0037: 1, L0055: 1,<br>L0455: 1, H0163: 1,<br>H0616: 1, L0060: 1,<br>H0560: 1, H0529: 1,<br>L0763: 1, L0770: 1,<br>L0764: 1, L0767: 1, |  |  |
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|---------|---------|-----|---------|------|--------------------------------------|---|--|--|--|
| HSKJP93 | 1022663 | 580 | 2 - 247 | 2755 | Ser-3 to Gln-9,<br>Thr-25 to Lys-40. | L0777: 9, H0622: 3,<br>L0771: 3, L0747: 3,<br>L0752: 3, H0657: 2,<br>L0763: 2, L0517: 2,<br>L0666: 2, L0748: 2,<br>L0590: 2, H0050: 1,<br>H0188: 1, H0687: 1,<br>H0428: 1, H0039: 1,<br>H0031: 1, H0032: 1,<br>H0674: 1, S0036: 1,<br>H0652: 1, L0369: 1,<br>L0520: 1, L0769: 1,<br>L0765: 1, L0773: 1,<br>L0662: 1, L0794: 1,<br>L0803: 1, L0804: 1,<br>L0775: 1, L0651: 1,<br>L0655: 1, L0659: 1,<br>L0782: 1, L0789: 1,<br>L0665: 1, L0438: 1, | L0768: 1, L0775: 1,<br>L0806: 1, L0776: 1,<br>L0659: 1, L0783: 1,<br>L0663: 1, L0664: 1,<br>H0658: 1, H0670: 1,<br>S0380: 1, H0522: 1,<br>H0134: 1, S0392: 1,<br>H0345: 1, L0745: 1,<br>L0756: 1, L0777: 1,<br>L0780: 1, L0731: 1 and<br>H0445: 1. |  |  |
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|         |         |     |           |      |  |  | H0670: 1, H0660: 1,<br>S0406: 1, S3014: 1,<br>L0756: 1, L0758: 1,<br>L0759: 1, L0595: 1,<br>S0011: 1 and H0712: 1.   |  |  |  |
| HAZAA64 | 1022719 | 581 | 106 - 705 | 2756 | Asn-58 to Thr-64,<br>Ile-72 to Ser-78,<br>Gly-119 to Lys-128,<br>Thr-185 to Leu-200. |  | H0695: 414, H0580:<br>44, L0777: 6, L0731: 6,<br>H0052: 5, L0766: 5,<br>L0747: 5, H0617: 4,<br>H0494: 4, S0045: 3,<br>H0083: 3, H0181: 3,<br>H0038: 3, L0637: 3,<br>L0779: 3, L0758: 3,<br>H0484: 2, H0599: 2,<br>S0049: 2, H0428: 2,<br>L0774: 2, L0775: 2,<br>L0518: 2, L0439: 2,<br>L0750: 2, L0596: 2,<br>L0588: 2, L0599: 2,<br>L0601: 2, H0265: 1,<br>H0556: 1, T0002: 1,<br>S0040: 1, H0294: 1,<br>H0341: 1, H0254: 1,<br>H0255: 1, S0420: 1,<br>S0444: 1, S0360: 1,<br>H0208: 1, H0492: 1,<br>L0623: 1, H0013: 1,<br>S0280: 1, H0156: 1,<br>L0021: 1, S0010: 1,<br>H0194: 1, H0046: 1, |  |  |  |



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|---------|---------|-----|-----------|------|--|---|---------|--------|
| HSEBD72 | 1022904 | 582 | 140 - 430 | 2757 | Thr-11 to Arg-16,<br>Asn-78 to Asp-84. | H0200: 1, H0051: 1,<br>H0510: 1, H0375: 1,<br>H0266: 1, H0188: 1,<br>S0036: 1, H0087: 1,<br>H0412: 1, H0102: 1,<br>T0042: 1, L0475: 1,<br>H0130: 1, L0769: 1,<br>L0768: 1, L0794: 1,<br>L0651: 1, L0776: 1,<br>L0807: 1, L0665: 1,<br>S0374: 1, H0520: 1,<br>H0689: 1, H0690: 1,<br>H0659: 1, H0660: 1,<br>H0672: 1, S0328: 1,<br>H0522: 1, H0696: 1,<br>S3012: 1, S0028: 1,<br>L0749: 1, L0755: 1,<br>L0759: 1, L0608: 1,<br>L0604: 1, S0011: 1 and<br>H0543: 1. | 14q24.1 | 182600 |
|         |         |     |           |      |  | S0406: 9, L0754: 9,<br>L0747: 9, L0752: 9,<br>H0556: 7, L0742: 7,<br>L0758: 7, S0410: 6,<br>H0658: 6, L0779: 6,<br>H0656: 5, S0444: 5,<br>S0360: 5, H0660: 5,<br>H0657: 4, H0255: 4,<br>H0545: 4, H0012: 4,<br>H0620: 4, H0708: 4.  |         |        |



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|--|--|--|--|--|--|--|
| L0744: 4, L0731: 4,<br>H0423: 4, H0662: 3,<br>L0622: 3, H0597: 3,<br>H0199: 3, H0615: 3,<br>H0688: 3, H0428: 3,<br>S0440: 3, S0422: 3,<br>H0529: 3, L0769: 3,<br>L0768: 3, H0670: 3,<br>H0134: 3, S3012: 3,<br>L0743: 3, S0116: 2,<br>H0125: 2, S0420: 2,<br>S0046: 2, H0333: 2,<br>H0486: 2, H0050: 2,<br>H0023: 2, H0383: 2,<br>H0673: 2, H0124: 2,<br>H0413: 2, H0561: 2,<br>S0438: 2, L0371: 2,<br>L0772: 2, L0662: 2,<br>L0776: 2, L0528: 2,<br>H0593: 2, H0684: 2,<br>H0435: 2, H0659: 2,<br>S0328: 2, H0521: 2,<br>S3014: 2, L0748: 2,<br>L0740: 2, L0745: 2,<br>L0750: 2, L0780: 2,<br>L0757: 2, H0445: 2,<br>H0668: 2, H0136: 2,<br>H0216: 2, H0422: 2,<br>H0265: 1, S0114: 1,<br>H0650: 1, S0110: 1, |  |  |  |  |  |  |
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|  | H0484: 1, H0483: 1,<br>H0254: 1, H0661: 1,<br>H0663: 1, H0402: 1,<br>S0356: 1, S0354: 1,<br>S0358: 1, S0376: 1,<br>H0722: 1, S0468: 1,<br>S0007: 1, S0045: 1,<br>S0278: 1, S0222: 1,<br>H0370: 1, H0613: 1,<br>H0600: 1, T0039: 1,<br>T0040: 1, T0112: 1,<br>H0013: 1, H0253: 1,<br>H0318: 1, H0235: 1,<br>H0327: 1, H0530: 1,<br>H0081: 1, L0471: 1,<br>H0197: 1, H0246: 1,<br>S0050: 1, H0373: 1,<br>H0275: 1, H0083: 1,<br>H0266: 1, T0006: 1,<br>H0033: 1, H0604: 1,<br>H0553: 1, H0617: 1,<br>H0376: 1, S0036: 1,<br>H0135: 1, H0090: 1,<br>H0038: 1, H0634: 1,<br>H0087: 1, H0059: 1,<br>H0100: 1, H0494: 1,<br>S0464: 1, S0142: 1,<br>S0210: 1, L0762: 1,<br>L0761: 1, L0764: 1,<br>L0771: 1, L0773: 1, |  |
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|---------|---------|-----|------------|------|---|---|---|-----------------|---|
| HDPYE27 | 1022911 | 583 | 380 - 1066 | 2758 | <p>Trp-1 to Ser-8,<br/>His-11 to Asn-16,<br/>Gln-19 to Pro-25,<br/>Gly-38 to Gly-44,<br/>Leu-54 to Arg-62,<br/>Ser-70 to Asp-78,<br/>Gln-83 to Ser-88,<br/>Thr-99 to Asn-105,<br/>Ser-123 to Val-135,<br/>Pro-143 to Arg-169,<br/>His-194 to Tyr-206.</p> | <p>L0521: 1, L0626: 1,<br/>L0767: 1, L0649: 1,<br/>L0774: 1, L0375: 1,<br/>L0806: 1, L0807: 1,<br/>L0517: 1, L0529: 1,<br/>L0665: 1, H0520: 1,<br/>S0126: 1, H0690: 1,<br/>H0709: 1, S0152: 1,<br/>S0044: 1, S0404: 1,<br/>H0555: 1, S0027: 1,<br/>S0028: 1, S0032: 1,<br/>H0444: 1, L0596: 1,<br/>L0605: 1, S0276: 1,<br/>H0542: 1, H0543: 1 and<br/>H0352: 1.</p> | <p>AR096: 1, AR104: 1,<br/>AR052: 0, AR060: 0,<br/>AR089: 0, AR039: 0,<br/>AR061: 0, AR055: 0,<br/>AR033: 0<br/>L0740: 18, H0521: 15,<br/>S0003: 14, L0777: 13,<br/>L0754: 12, L0756: 12,<br/>H0710: 11, L0747: 10,<br/>L0766: 9, L0438: 9,<br/>L0750: 7, L0752: 7,<br/>H0622: 6, H0522: 6,<br/>L0439: 6, L0757: 6,<br/>H0156: 5, L0775: 5,<br/>S0136: 5, L0731: 5,</p> | <p>9q13-q21</p> | <p>190100,<br/>200150,<br/>229300,<br/>229300,<br/>600429,<br/>600884,<br/>600974,<br/>600998,<br/>602014</p> |
|---------|---------|-----|------------|------|---|---|---|-----------------|---|







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|--|--|--|--|--|--|
| L0753: 2, L0758: 2,<br>L0597: 2, L0592: 2,<br>L0485: 2, H0543: 2,<br>H0422: 2, H0677: 2,<br>H0624: 1, H0171: 1,<br>H0556: 1, S0040: 1,<br>H0716: 1, H0657: 1,<br>H0669: 1, S0420: 1,<br>S0442: 1, S0358: 1,<br>S0444: 1, H0580: 1,<br>H0208: 1, S0045: 1,<br>H0645: 1, L0717: 1,<br>H0351: 1, H0549: 1,<br>H0550: 1, S0222: 1,<br>H0431: 1, H0614: 1,<br>H0455: 1, H0587: 1,<br>T0040: 1, T0060: 1,<br>H0427: 1, S0280: 1,<br>H0706: 1, H0421: 1,<br>S0049: 1, H0544: 1,<br>H0545: 1, H0150: 1,<br>H0569: 1, H0050: 1,<br>H0373: 1, N0007: 1,<br>H0201: 1, S0051: 1,<br>S0318: 1, S0334: 1,<br>H0687: 1, S0312: 1,<br>H0428: 1, T0006: 1,<br>H0031: 1, H0644: 1,<br>H0212: 1, S0364: 1,<br>L0455: 1, H0708: 1, |  |  |  |  |  |
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|  | H0591: 1, H0040: 1,<br>T0067: 1, H0379: 1,<br>H0264: 1, H0488: 1,<br>T0069: 1, T0004: 1,<br>S0038: 1, H0641: 1,<br>H0646: 1, S0144: 1,<br>H0538: 1, S0210: 1,<br>S0422: 1, S0002: 1,<br>S0426: 1, UNKWN: 1,<br>H0529: 1, L0763: 1,<br>L0371: 1, L0637: 1,<br>L0761: 1, L0630: 1,<br>L0372: 1, L0646: 1,<br>L0771: 1, L0773: 1,<br>L0364: 1, L0803: 1,<br>L0651: 1, L0806: 1,<br>L0655: 1, L0661: 1,<br>L0657: 1, L0526: 1,<br>L0809: 1, L0544: 1,<br>L0663: 1, S0148: 1,<br>S0310: 1, L0352: 1,<br>H0593: 1, S0126: 1,<br>H0435: 1, H0670: 1,<br>H0648: 1, H0539: 1,<br>L0602: 1, H0696: 1,<br>S0044: 1, H0555: 1,<br>H0478: 1, L0743: 1,<br>L0751: 1, L0745: 1,<br>L0755: 1; H0445: 1,<br>S0308: 1, S0394: 1, |  |
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|         |         |     |           |      |  |  |      |   |  |
|---------|---------|-----|-----------|------|--|--|------|---|--|
|         |         |     |           |      |  | L0480: 1, L0362: 1,<br>S0106: 1, S0192: 1,<br>S0242: 1, H0542: 1,<br>H0423: 1, S0424: 1 and<br>S0446: 1.   |      |   |  |
| HCRQL51 | 1022997 | 584 | 47 - 1030 | 2759 | Ser-35 to Gly-40,<br>Ser-103 to His-109,<br>Tyr-151 to Gly-159,<br>Pro-216 to Glu-224,<br>Asn-249 to Trp-258,<br>Pro-278 to Glu-284. | H0013: 10, H0644: 6,<br>H0144: 6, H0615: 5,<br>L0748: 4, L0777: 4,<br>H0393: 3, T0114: 3,<br>H0012: 3, H0024: 3,<br>H0529: 3, L0438: 3,<br>H0547: 3, L0439: 3,<br>H0624: 2, H0170: 2,<br>H0341: 2, L0005: 2,<br>H0370: 2, H0050: 2,<br>L0471: 2, H0031: 2,<br>H0038: 2, L0750: 2,<br>L0758: 2, H0595: 2,<br>L0592: 2, H0171: 1,<br>S0212: 1, S0418: 1,<br>S0356: 1, H0619: 1,<br>L0717: 1, S0222: 1,<br>H0427: 1, H0036: 1,<br>H0046: 1, H0620: 1,<br>H0594: 1, H0266: 1,<br>H0328: 1, L0142: 1,<br>H0591: 1, H0616: 1,<br>H0059: 1, H0625: 1,<br>S0210: 1, L0768: 1,<br>H0520: 1, H0519: 1, | 7q32 | 180105,<br>190900,<br>222800,<br>246900 |  |



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|---------|---------|-----|------------|------|-------------------|--|--|--|--|--|
|         |         |     |            |      |                   |  | H0672: 1, S0152: 1,<br>H0555: 1, L0742: 1,<br>L0779: 1, H0445: 1,<br>S0194: 1, H0422: 1 and<br>L0698: 1.   |  |  |  |
| HDTCC55 | 1023046 | 585 | 195 - 533  | 2760 | Ser-26 to Ser-32. |  | H0486: 1 and L0766:<br>1.  |  |  |  |
| HOOJQ91 | 1023049 | 586 | 1307 - 525 | 2761 | Ala-2 to Thr-9.   |  |  |  |  |  |
| HCE4K28 | 1023227 | 587 | 238 - 840  | 2762 | Phe-15 to Gly-29. |  | L0750: 6, L0766: 5,<br>L0809: 4, L0747: 4,<br>L0758: 4, S0354: 3,<br>H0617: 3, L0775: 3,<br>L0783: 3, H0690: 3,<br>S0406: 3, L0753: 3,<br>L0601: 3, H0255: 2,<br>S0007: 2, H0618: 2,<br>H0253: 2, H0309: 2,<br>H0150: 2, H0428: 2,<br>H0553: 2, H0494: 2,<br>L0770: 2, L0771: 2,<br>L0803: 2, L0774: 2,<br>L0666: 2, S0330: 2,<br>H0539: 2, H0134: 2,<br>L0777: 2, L0592: 2,<br>H0624: 1, H0686: 1,<br>H0664: 1, S0408: 1,<br>H0489: 1, H0580: 1,<br>H0351: 1, S0278: 1,<br>H0333: 1, H0559: 1,<br>S0474: 1, H0052: 1, |  |  |  |



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|---------|---------|-----|----------|------|--|--|--|---|--|--------------------|--------|
| HPDVY62 | 1023264 | 588 | 2 - 1126 | 2763 |  |  |  | H0545: 1, T0003: 1,<br>H0124: 1, H0634: 1,<br>H0087: 1, H0477: 1,<br>H0412: 1, L0763: 1,<br>L0769: 1, L0761: 1,<br>L0767: 1, L0804: 1,<br>L0806: 1, L0805: 1,<br>L0659: 1, L0787: 1,<br>L0791: 1, H0547: 1,<br>S0126: 1, H0658: 1,<br>H0670: 1, S0328: 1,<br>S0380: 1, H0521: 1,<br>H0522: 1, L0742: 1,<br>L0744: 1, L0748: 1,<br>L0779: 1, L0731: 1,<br>L0759: 1, L0589: 1,<br>L0581: 1, H0665: 1,<br>S0276: 1 and H0352: 1. |  | 10q26.13-<br>q26.3 | 263700 |
|         |         |     |          |      |  |  |  | H0624: 2, H0586: 2,<br>H0031: 2, L0748: 2,<br>L0439: 2, H0171: 1,<br>S0356: 1, S0376: 1,<br>H0052: 1, H0251: 1,<br>H0050: 1, H0014: 1,<br>H0051: 1, H0647: 1,<br>L0789: 1, H0144: 1,<br>H0658: 1, H0521: 1,<br>L0754: 1, L0752: 1,<br>S0436: 1, S0276: 1 and<br>S0424: 1.   |  |                    |        |



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|---------|---------|-----|------------|------|--|--|---|--|
| HLHDK42 | 1023339 | 589 | 1 - 351    | 2764 | Asn-19 to Asp-29,<br>Leu-34 to Gly-41. | H0024: 2 and H0596:<br>1.  |   |  |
| HLDRQ55 | 1023375 | 590 | 2 - 421    | 2765 |  | H0081: 1, H0510: 1<br>and H0144: 1.  |   |  |
| HVVBI06 | 1023414 | 591 | 1449 - 646 | 2766 |  | H0543: 7, H0341: 6,<br>S0003: 5, L0740: 5,<br>L0747: 5, H0619: 4,<br>H0575: 4, H0318: 4,<br>S0206: 4, L0750: 4,<br>L0588: 4, H0542: 4,<br>H0265: 3, S0358: 3,<br>S0046: 3, H0486: 3,<br>H0069: 3, S0022: 3,<br>L0666: 3, H0556: 2,<br>S0116: 2, S0212: 2,<br>S0418: 2, S0376: 2,<br>S0360: 2, S0132: 2,<br>H0497: 2, L0471: 2,<br>H0090: 2, H0551: 2,<br>H0494: 2, H0633: 2,<br>S0144: 2, H0529: 2,<br>L0662: 2, L0655: 2,<br>L0664: 2, H0144: 2,<br>H0547: 2, S0152: 2,<br>L0757: 2, H0445: 2,<br>H0624: 1, S0024: 1,<br>S0114: 1, S0134: 1,<br>S0218: 1, H0650: 1,<br>H0657: 1, H0656: 1,<br>H0663: 1, H0662: 1, | X |  |



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| S0420: 1, H0580: 1,<br>S0007: 1, H0393: 1,<br>H0441: 1, H0331: 1,<br>H0574: 1, T0039: 1,<br>T0114: 1, H0427: 1,<br>H0004: 1, H0581: 1,<br>H0052: 1, H0251: 1,<br>H0184: 1, T0115: 1,<br>H0046: 1, H0009: 1,<br>H0050: 1, H0620: 1,<br>H0024: 1, H0373: 1,<br>H0510: 1, S6028: 1,<br>H0266: 1, H0267: 1,<br>S0318: 1, S0316: 1,<br>H0028: 1, S0214: 1,<br>H0328: 1, H0428: 1,<br>H0031: 1, H0644: 1,<br>H0628: 1, H0169: 1,<br>H0598: 1, H0038: 1,<br>H0616: 1, H0380: 1,<br>H0272: 1, H0412: 1,<br>S0150: 1, H0647: 1,<br>H0646: 1, S0344: 1,<br>S0210: 1, S0422: 1,<br>S0002: 1, L0769: 1,<br>L0372: 1, L0646: 1,<br>L0649: 1, L0774: 1,<br>L0775: 1, L0438: 1,<br>H0519: 1, S0126: 1,<br>H0660: 1, H0666: 1, |
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|         |         |     |         |      |   |   |  |  |
|---------|---------|-----|---------|------|---|---|--|--|
| HOCME51 | 1023422 | 592 | 2 - 319 | 2767 | Glu-36 to Thr-44,<br>His-72 to Tyr-78,<br>Glu-82 to Tyr-88. | H0672: 1, S0380: 1,<br>L0602: 1, H0134: 1,<br>S0390: 1, S3014: 1,<br>S0027: 1, S0028: 1,<br>L0748: 1, L0439: 1,<br>L0754: 1, L0749: 1,<br>L0756: 1, L0731: 1,<br>H0444: 1, H0595: 1,<br>L0595: 1, L0361: 1,<br>L0603: 1, H0667: 1,<br>H0422: 1 and S0424: 1.  |  |  |
|         |         |     |         |      |   | H0623: 4, H0046: 3,<br>H0581: 2, H0023: 2,<br>H0083: 2, L0791: 2,<br>L0438: 2, H0547: 2,<br>H0539: 2, L0750: 2,<br>H0583: 1, H0341: 1,<br>H0125: 1, S0420: 1,<br>S0356: 1, H0208: 1,<br>S0045: 1, H0261: 1,<br>S0222: 1, H0592: 1,<br>H0635: 1, H0318: 1,<br>H0052: 1, L0163: 1,<br>H0266: 1, H0494: 1,<br>L0475: 1, H0538: 1,<br>L3904: 1, S0374: 1,<br>H0660: 1, H0522: 1,<br>H0134: 1, S0028: 1,<br>S0206: 1, L0439: 1,<br>L0753: 1, L0595: 1, |  |  |



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|---------|---------|-----|------------|------|--|---|--|--|--|
|         |         |     |            |      |  | H0542: 1, H0543: 1 and<br>H0506: 1.   |  |  |  |
| HPDOP74 | 1023531 | 593 | 1659 - 307 | 2768 | Leu-23 to Asp-31,<br>Gln-46 to Ile-69,<br>Ile-120 to Lys-128,<br>Pro-148 to Asp-154,<br>Pro-216 to Val-223,<br>Asn-261 to Ala-273,<br>Gly-290 to Gln-299,<br>Lys-305 to Tyr-312,<br>Glu-341 to Ala-346,<br>Pro-394 to Met-404,<br>Ser-418 to Ser-440,<br>Glu-442 to Gly-450. | L0591: 11, H0069: 9,<br>H0494: 9, L0588: 7,<br>H0543: 7, H0657: 6,<br>H0318: 6, T0042: 6,<br>H0547: 6, H0556: 5,<br>L0665: 5, L0751: 5,<br>H0423: 5, T0002: 4,<br>H0050: 4, L0747: 4,<br>L0779: 4, H0341: 3,<br>H0638: 3, H0580: 3,<br>H0393: 3, H0052: 3,<br>H0266: 3, H0617: 3,<br>H0616: 3, H0413: 3,<br>H0521: 3, L0754: 3,<br>L0596: 3, L0362: 3,<br>H0422: 3, H0265: 2,<br>L0470: 2, H0305: 2,<br>H0637: 2, S0045: 2,<br>H0370: 2, T0109: 2,<br>H0156: 2, H0599: 2,<br>H0575: 2, H0036: 2,<br>H0618: 2, H0253: 2,<br>L0483: 2, H0181: 2,<br>H0038: 2, H0561: 2,<br>H0646: 2, L0770: 2,<br>L0769: 2, L0646: 2,<br>L0521: 2, L0662: 2,<br>L0768: 2, L0803: 2, |  |  |  |



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|---------|---------|-----|----------|------|---|---|--|
| HMSOH12 | 1023545 | 594 | 1 - 1077 | 2769 | Lys-25 to Asp-31,<br>His-46 to Glu-54,<br>Ser-80 to Lys-86,<br>Val-109 to Lys-115,<br>Arg-143 to Met-149,<br>Lys-193 to Arg-198,<br>His-253 to Gly-259. | H0707: 1, L0592: 1,<br>H0653: 1, H0665: 1,<br>S0276: 1 and S0424: 1.<br><br>L0731: 12, L0439: 10,<br>L0747: 8, L0770: 7,<br>L0662: 6, L0775: 5,<br>L0663: 5, H0423: 5,<br>L0769: 4, L0752: 4,<br>H0422: 4, H0657: 3,<br>H0656: 3, S0356: 3,<br>S0360: 3, S0222: 3,<br>H0318: 3, H0083: 3,<br>L0764: 3, L0768: 3,<br>L0766: 3, L0809: 3,<br>L0665: 3, H0547: 3,<br>H0682: 3, H0659: 3,<br>H0672: 3, L0750: 3,<br>L0588: 3, L0591: 3,<br>S0007: 2, H0581: 2,<br>H0644: 2, H0412: 2,<br>S0002: 2, S0426: 2,<br>L0648: 2, L0364: 2,<br>L0774: 2, L0375: 2,<br>L0655: 2, L0666: 2,<br>L0664: 2, H0520: 2,<br>H0435: 2, H0666: 2,<br>H0651: 2, H0521: 2,<br>S0027: 2, L0740: 2,<br>L0755: 2, L0757: 2,<br>L0758: 2, H0542: 2, |  |
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|  |  | H0171: 1, H0556: 1,<br>H0686: 1, S0430: 1,<br>H0650: 1, H0341: 1,<br>S0212: 1, S0418: 1,<br>L0717: 1, H0411: 1,<br>H0610: 1, H0415: 1,<br>H0486: 1, H0427: 1,<br>H0599: 1, S0010: 1,<br>S0346: 1, H0596: 1,<br>H0046: 1, H0050: 1,<br>H0012: 1, H0014: 1,<br>H0051: 1, H0355: 1,<br>H0266: 1, S0250: 1,<br>L0483: 1, T0006: 1,<br>L0055: 1, H0040: 1,<br>H0413: 1, S0472: 1,<br>S0210: 1, H0695: 1,<br>L0598: 1, L0640: 1,<br>L0638: 1, L0761: 1,<br>L0381: 1, L0803: 1,<br>L0650: 1, L0651: 1,<br>L0378: 1, L0806: 1,<br>L0653: 1, L0776: 1,<br>L0661: 1, L0527: 1,<br>L0659: 1, L0529: 1,<br>H0144: 1, H0702: 1,<br>L0438: 1, H0519: 1,<br>H0670: 1, H0648: 1,<br>S0328: 1, S0044: 1,<br>H0694: 1, H0555: 1, |  |  |  |  |
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|---------|---------|-----|------------|------|--|---|--|---|---------|--|--|
|         |         |     |            |      |  |   |  | H0436: 1, L0748: 1,<br>L0756: 1, L0779: 1,<br>H0595: 1, L0608: 1,<br>L0593: 1, L0595: 1,<br>L0362: 1, S0026: 1,<br>H0136: 1 and S0192: 1. |         |  |  |
| HOPJG50 | 1023584 | 595 | 866 - 507  | 2770 |  | Thr-18 to Asn-31,<br>Lys-39 to Ser-47,<br>Ser-71 to His-76,<br>Gln-113 to Lys-120.  |  | L0748: 2, L0749: 2,<br>L0731: 2, H0624: 1,<br>H0486: 1, H0309: 1,<br>L0769: 1, L0653: 1,<br>H0684: 1 and L0779: 1.                        | 4       |  |  |
| HDUAB04 | 1023585 | 596 | 3 - 371    | 2771 |  | Thr-21 to Asn-34,<br>Lys-42 to Ser-50,<br>Ser-74 to His-79,<br>Gln-116 to Lys-123.  |  |   | 4       |  |  |
| HVCAA38 | 1023632 | 597 | 27 - 818   | 2772 |  | Asn-12 to Thr-17,<br>Gln-60 to Arg-66,<br>Ser-71 to Asn-83,<br>Thr-89 to Ala-96,<br>Gln-120 to Thr-126,<br>Glu-149 to Lys-154,<br>Thr-213 to Ser-219,<br>Arg-231 to Tyr-244,<br>Trp-252 to Trp-259. |  |   | 22q12.1 | 123620,<br>188826,<br>600850,<br>601669                        |  |
| HIBCN87 | 1023837 | 598 | 1753 - 776 | 2773 |  | Arg-1 to Cys-7,<br>Val-96 to Arg-105,<br>Glu-130 to Leu-135,<br>Pro-207 to Arg-225,<br>Asp-231 to Cys-251,<br>Pro-259 to Ile-264,   |  | L0439: 8, L0794: 5,<br>L0758: 5, L0805: 4,<br>L0809: 4, S0358: 3,<br>L0769: 3, L0776: 3,<br>L0665: 3, L0438: 3,<br>H0658: 3, L0717: 2,    | 22q13.1 | 103050,<br>103050,<br>124030,<br>124030,<br>138981,<br>182380, |  |



|         |         |     |          |   |  |  |  |   |         |   |
|---------|---------|-----|----------|---|--|--|--|---|---------|---|
|         |         |     |          | Pro-294 to Pro-304,<br>Glu-310 to Ile-316,<br>Ser-320 to Pro-326. |  |  |  | H0052: 2, H0059: 2,<br>L0662: 2, L0803: 2,<br>L0789: 2, H0690: 2,<br>L0748: 2, H0556: 1,<br>S0114: 1, H0583: 1,<br>S0376: 1, H0600: 1,<br>H0618: 1, H0253: 1,<br>T0010: 1, H0252: 1,<br>H0617: 1, H0038: 1,<br>H0100: 1, L0520: 1,<br>L0761: 1, L0768: 1,<br>L0766: 1, L0783: 1,<br>L0666: 1, L0663: 1,<br>H0547: 1, H0593: 1,<br>H0683: 1, H0670: 1,<br>H0648: 1, H0436: 1,<br>L0751: 1, L0755: 1,<br>H0445: 1 and H0352: 1. |         | 188826,<br>190040,<br>190040,<br>190040 |
| HPCOM04 | 1024000 | 599 | 36 - 818 | 2774  | Arg-1 to Gln-7,<br>Pro-18 to Leu-23,<br>Asp-42 to Ile-47,<br>Gln-56 to Glu-63,<br>Glu-93 to Ile-105,<br>Glu-132 to Leu-137,<br>Ile-202 to Leu-208,<br>Asn-220 to Lys-226,<br>Asn-254 to Phe-259. |  |  | L0438: 3, L0764: 2,<br>H0659: 2, L0754: 2,<br>H0589: 1, H0580: 1,<br>H0013: 1, H0622: 1,<br>H0617: 1, T0067: 1,<br>L0767: 1, L0775: 1,<br>L0655: 1, L0659: 1,<br>L0666: 1, H0648: 1,<br>S0330: 1, H0710: 1,<br>L0748: 1, L0740: 1,<br>L0747: 1, L0753: 1,<br>L0480: 1 and L0599: 1.   | 22q11.1 | 231950,<br>600850                       |



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| HUCPU06 | 1024069 | 600 | 609 - 313  | 2775 |                                      | L0766: 5, L0770: 2,<br>L0803: 2, L0666: 2,<br>L0747: 2, L0603: 2,<br>H0686: 1, S0420: 1,<br>L0662: 1, L0794: 1,<br>L0783: 1, L0383: 1,<br>L0809: 1, L0665: 1,<br>H0684: 1, H0658: 1 and<br>L0750: 1.   |  |  |
| HPAME01 | 1024332 | 601 | 564 - 1061 | 2776 | Cys-1 to Gln-6,<br>Val-19 to Ala-24. | L0439: 12, L0743: 5,<br>L0747: 5, L0749: 5,<br>L0769: 4, L0794: 4,<br>L0731: 4, L0803: 3,<br>L0774: 3, L0809: 3,<br>H0254: 2, H0393: 2,<br>H0318: 2, H0052: 2,<br>H0188: 2, H0040: 2,<br>L0659: 2, L0790: 2,<br>L0438: 2, L0753: 2,<br>H0423: 2, H0265: 1,<br>H0685: 1, H0341: 1,<br>H0402: 1, S0360: 1,<br>H0580: 1, L0717: 1,<br>H0550: 1, H0370: 1,<br>H0333: 1, H0643: 1,<br>H0486: 1, H0013: 1,<br>H0250: 1, H0599: 1,<br>H0042: 1, H0253: 1,<br>H0327: 1, H0046: 1,<br>H0086: 1, H0012: 1, |  |  |



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| HTTJS76 | 1024472 | 602 | 3 - 392 | 2777 | Pro-1 to His-22,<br>Lys-45 to Arg-59,<br>Asp-77 to Pro-88,<br>Ser-109 to Glu-119. | S0051: 1, H0399: 1,<br>H0687: 1, H0286: 1,<br>H0617: 1, H0032: 1,<br>H0673: 1, S0036: 1,<br>H0135: 1, H0591: 1,<br>H0087: 1, H0100: 1,<br>T0041: 1, H0494: 1,<br>H0561: 1, H0130: 1,<br>L0638: 1, L0764: 1,<br>L0662: 1, L0804: 1,<br>L0651: 1, L0657: 1,<br>L0783: 1, L0666: 1,<br>L0664: 1, L0665: 1,<br>L0352: 1, H0547: 1,<br>H0519: 1, H0682: 1,<br>H0684: 1, H0521: 1,<br>S0044: 1, H0631: 1,<br>S0206: 1, L0754: 1,<br>L0779: 1, L0780: 1,<br>L0597: 1, H0543: 1,<br>H0422: 1 and H0506: 1,<br>L0740: 15, L0754: 7,<br>L0747: 6, L0777: 6,<br>L0662: 5, H0539: 5,<br>L0439: 5, L0758: 5,<br>L0438: 4, L0748: 4,<br>S0444: 3, H0031: 3,<br>H0553: 3, L0770: 3,<br>L0774: 3, L0749: 3,<br>L0756: 3, L0755: 3. |  |  |
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|         |         |     |            |      |   |   |      |   |
|---------|---------|-----|------------|------|---|---|------|---|
| HCORI57 | 1024556 | 603 | 230 - 1237 | 2778 | Gly-29 to Glu-35,<br>Met-57 to Lys-64,<br>Ser-104 to Ser-109,<br>Tyr-122 to Val-128,<br>Pro-144 to Asp-153,<br>Pro-244 to Gly-253,<br>Arg-323 to Pro-330. | H0519: 1, S0126: 1,<br>H0689: 1, H0658: 1,<br>H0666: 1, H0648: 1,<br>H0651: 1, S0328: 1,<br>S0152: 1, S0350: 1,<br>H0521: 1, H0696: 1,<br>S0146: 1, L0750: 1,<br>L0752: 1, L0759: 1,<br>H0445: 1, L0684: 1,<br>L0686: 1, S0434: 1,<br>S0436: 1, L0599: 1,<br>L0361: 1 and S0106: 1.<br><br>H0553: 9, H0624: 4,<br>L0471: 4, H0619: 3,<br>H0494: 3, H0520: 3,<br>H0547: 3, S0126: 3,<br>L0755: 3, H0013: 2,<br>H0031: 2, H0644: 2,<br>H0040: 2, L0659: 2,<br>L0666: 2, L0665: 2,<br>H0144: 2, H0519: 2,<br>H0670: 2, L0780: 2,<br>L0361: 2, S0026: 2,<br>H0171: 1, H0661: 1,<br>S0360: 1, H0244: 1,<br>H0156: 1, L0021: 1,<br>S0010: 1, H0052: 1,<br>H0046: 1, L0163: 1,<br>S0214: 1, L0142: 1,<br>H0032: 1, H0551: 1, | 8p22 | 148370,<br>238600,<br>238600,<br>238600,<br>238600,<br>600143,<br>601385,<br>602629 |
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| HNORG50 | 1024624 | 604 | 2 - 1120 | 2779 | Ile-1 to Gln-18,<br>Lys-69 to Gln-74,<br>Ala-81 to Arg-86,<br>Lys-102 to Lys-107,<br>Glu-146 to Val-153,<br>His-156 to Ile-161,<br>Glu-195 to Ser-207,<br>Asp-306 to Leu-316,<br>Ala-318 to Gly-333,<br>Gln-346 to Asp-352. | H0059: 1, L0598: 1,<br>L0520: 1, L0769: 1,<br>L0637: 1, L0768: 1,<br>L0803: 1, L0804: 1,<br>L0653: 1, L0657: 1,<br>L0383: 1, H0690: 1,<br>H0435: 1, H0658: 1,<br>S0330: 1, H0518: 1,<br>S0152: 1, S0044: 1,<br>S0027: 1, L0754: 1,<br>L0747: 1, L0750: 1,<br>L0731: 1, L0608: 1,<br>L0593: 1, L0594: 1 and<br>H0667: 1.   |  |  |
|         |         |     |          |      |   | L0601: 25, S0474: 22,<br>H0521: 17, S0278: 16,<br>H0542: 14, H0543: 13,<br>L0596: 11, H0580: 10,<br>H0494: 10, H0575: 8,<br>L0659: 8, H0581: 7,<br>H0559: 6, H0031: 6,<br>L0655: 6, S3014: 6,<br>S0027: 6, L0591: 6,<br>H0657: 5, S0358: 5,<br>S0360: 5, H0457: 5,<br>H0529: 5, L0666: 5,<br>S0152: 5, L0748: 5,<br>L0731: 5, H0583: 4,<br>H0650: 4, H0587: 4,<br>H0318: 4, H0040: 4, |  |  |



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| S0144: 4, S0142: 4,<br>L0646: 4, L0657: 4,<br>S0380: 4, H0522: 4,<br>L0439: 4, H0445: 4,<br>H0423: 4, H0295: 3,<br>H0656: 3, H0638: 3,<br>S0046: 3, H0052: 3,<br>H0083: 3, H0266: 3,<br>H0553: 3, H0644: 3,<br>H0551: 3, H0264: 3,<br>H0059: 3, S0440: 3,<br>S0002: 3, L0761: 3,<br>L0649: 3, L0664: 3,<br>S0126: 3, H0689: 3,<br>H0672: 3, L0755: 3,<br>H0422: 3, L0600: 3,<br>H0624: 2, H0265: 2,<br>H0556: 2, S0114: 2,<br>S0134: 2, H0341: 2,<br>H0402: 2, H0637: 2,<br>S0045: 2, H0550: 2,<br>H0392: 2, H0586: 2,<br>H0250: 2, H0545: 2,<br>H0050: 2, H0424: 2,<br>H0413: 2, H0561: 2,<br>H0641: 2, S0344: 2,<br>S0426: 2, L0369: 2,<br>L0770: 2, L0769: 2,<br>L0662: 2, L0766: 2,<br>L0375: 2, L0378: 2, |
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| L0653: 2, L0635: 2,<br>L0382: 2, H0702: 2,<br>H0659: 2, S0350: 2,<br>S0037: 2, L0740: 2,<br>L0754: 2, L0747: 2,<br>S0434: 2, S0196: 2,<br>H0585: 1, H0294: 1,<br>T0049: 1, S0116: 1,<br>S0212: 1, H0484: 1,<br>H0255: 1, H0306: 1,<br>H0305: 1, H0459: 1,<br>S0418: 1, S0420: 1,<br>L0562: 1, S0442: 1,<br>S0354: 1, S0376: 1,<br>S0140: 1, H0370: 1,<br>H0613: 1, H0642: 1,<br>H0257: 1, H0492: 1,<br>H0486: 1, H0635: 1,<br>H0002: 1, H0599: 1,<br>H0706: 1, H0421: 1,<br>S0049: 1, T0110: 1,<br>H0041: 1, L0157: 1,<br>H0023: 1, H0051: 1,<br>S0051: 1, H0107: 1,<br>H0375: 1, H0179: 1,<br>H0271: 1, S0214: 1,<br>H0039: 1, H0622: 1,<br>H0628: 1, H0617: 1,<br>H0090: 1, H0087: 1,<br>H0488: 1, H0412: 1, |
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|  | T0042: 1, H0280: 1,<br>H0560: 1, H0509: 1,<br>H0646: 1, H0538: 1,<br>L0762: 1, L0638: 1,<br>L0637: 1, L0372: 1,<br>L0642: 1, L0643: 1,<br>L0773: 1, L0648: 1,<br>L0363: 1, L0794: 1,<br>L0381: 1, L0804: 1,<br>L0774: 1, L0775: 1,<br>L0806: 1, L0805: 1,<br>L0776: 1, L0383: 1,<br>L0663: 1, H0144: 1,<br>H0697: 1, S0374: 1,<br>H0691: 1, L0438: 1,<br>H0519: 1, H0690: 1,<br>H0682: 1, H0684: 1,<br>H0435: 1, H0658: 1,<br>H0648: 1, S0328: 1,<br>H0539: 1, H0518: 1,<br>S0044: 1, H0134: 1,<br>H0214: 1, H0555: 1,<br>H0627: 1, S0432: 1,<br>S3012: 1, S0028: 1,<br>S0032: 1, L0743: 1,<br>L0749: 1, L0779: 1,<br>L0777: 1, L0757: 1,<br>L0597: 1, L0599: 1,<br>L0608: 1, H0665: 1,<br>S0194: 1 and S0424: 1. |  |  |  |  |  |
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|---------|---------|-----|------------|------|--|--|--|--|
| HWLVR07 | 1024915 | 605 | 687 - 328  | 2780 | Lys-28 to Thr-33,<br>Asn-35 to Lys-53,<br>Ala-98 to Glu-104.   |  |  |  |
| HOPKF60 | 1025047 | 606 | 1132 - 197 | 2781 | Glu-41 to Lys-46,<br>Ser-49 to Glu-55,<br>Asp-109 to Arg-114,<br>His-133 to Asp-138,<br>Arg-170 to Glu-181,<br>Ala-246 to Pro-254,<br>Lys-282 to Ser-287,<br>Ala-296 to Asp-302. | S0358: 10, H0584: 9,<br>S0420: 8, L0439: 8,<br>H0543: 8, H0250: 7,<br>H0618: 7, L0601: 7,<br>S0046: 6, H0424: 6,<br>H0251: 5, H0046: 5,<br>L0438: 5, H0435: 5,<br>H0136: 5, S0045: 4,<br>H0599: 4, H0494: 4,<br>H0561: 4, H0547: 4,<br>H0539: 4, L0748: 4,<br>L0751: 4, S0212: 3,<br>S0007: 3, H0486: 3,<br>H0706: 3, H0253: 3,<br>H0545: 3, S0036: 3,<br>H0040: 3, H0551: 3,<br>H0264: 3, H0132: 3,<br>H0529: 3, H0144: 3,<br>H0520: 3, H0448: 3,<br>H0445: 3, H0665: 3,<br>H0423: 3, H0677: 3,<br>H0624: 2, S0040: 2,<br>H0341: 2, H0484: 2,<br>H0125: 2, S0360: 2,<br>S0222: 2, H0586: 2,<br>H0497: 2, H0575: 2,<br>H0318: 2, H0052: 2, |  |  |



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| H0059: 2, T0042: 2,<br>S0440: 2, H0641: 2,<br>S0210: 2, S0002: 2,<br>S0126: 2, H0689: 2,<br>H0666: 2, H0521: 2,<br>S0027: 2, L0752: 2,<br>S0434: 2, H0422: 2,<br>S0042: 2, S0424: 2,<br>H0170: 1, H0171: 1,<br>H0556: 1, T0002: 1,<br>H0218: 1, H0161: 1,<br>H0686: 1, S0342: 1,<br>H0716: 1, H0295: 1,<br>H0294: 1, H0656: 1,<br>H0483: 1, H0661: 1,<br>H0458: 1, H0638: 1,<br>H0192: 1, S0356: 1,<br>S0442: 1, S0376: 1,<br>S0444: 1, H0675: 1,<br>H0580: 1, S0468: 1,<br>H0208: 1, H0393: 1,<br>L0717: 1, S0278: 1,<br>H0261: 1, H0550: 1,<br>S6014: 1, H0370: 1,<br>H0592: 1, H0333: 1,<br>H0559: 1, H0256: 1,<br>H0485: 1, T0040: 1,<br>L0586: 1, H0069: 1,<br>H0075: 1, H0042: 1,<br>H0581: 1, H0121: 1, |
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|  | H0041: 1, H0123: 1,<br>H0050: 1, H0012: 1,<br>H0620: 1, H0014: 1,<br>L0163: 1, H0051: 1,<br>S0051: 1, T0010: 1,<br>H0083: 1, H0266: 1,<br>H0179: 1, H0271: 1,<br>H0292: 1, H0286: 1,<br>S0022: 1, H0039: 1,<br>H0553: 1, H0628: 1,<br>H0617: 1, H0383: 1,<br>H0598: 1, H0135: 1,<br>H0087: 1, H0380: 1,<br>H0412: 1, H0413: 1,<br>H0056: 1, H0100: 1,<br>T0041: 1, S0015: 1,<br>H0625: 1, S0464: 1,<br>S0294: 1, S0438: 1,<br>H0509: 1, H0130: 1,<br>H0646: 1, H0652: 1,<br>S0344: 1, S0374: 1,<br>L0565: 1, T0068: 1,<br>H0693: 1, H0519: 1,<br>H0593: 1, H0684: 1,<br>H0658: 1, H0670: 1,<br>H0660: 1, H0518: 1,<br>S0332: 1, H0522: 1,<br>H0694: 1, H0555: 1,<br>H0479: 1, H0447: 1,<br>H0626: 1, S3014: 1, |  |
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| HBDAD74 | 1025102 | 607 | 2 - 406 | 2782 | Gly-22 to Glu-28,<br>Glu-42 to Arg-60,<br>Leu-67 to Glu-89,<br>Asp-106 to Thr-118,<br>Gln-120 to Ile-130. | S0028: 1, L0743: 1,<br>L0744: 1, L0754: 1,<br>L0745: 1, L0747: 1,<br>L0755: 1, L0757: 1,<br>L0759: 1, H0595: 1,<br>L0596: 1, L0592: 1,<br>L0608: 1, L0593: 1,<br>H0668: 1, H0653: 1,<br>H0542: 1, H0506: 1 and<br>H0352: 1.<br><br>L0766: 7, L0803: 4,<br>L0779: 3, H0421: 2,<br>H0615: 2, L0382: 2,<br>L0748: 2, L0777: 2,<br>L0002: 1, S0116: 1,<br>H0638: 1, S0358: 1,<br>H0393: 1, S6022: 1,<br>H0431: 1, H0586: 1,<br>H0486: 1, H0427: 1,<br>S0474: 1, H0327: 1,<br>H0057: 1, H0428: 1,<br>S0036: 1, L0351: 1,<br>H0538: 1, L0638: 1,<br>L0667: 1, L0653: 1,<br>L0659: 1, L0809: 1,<br>H0693: 1, L0438: 1,<br>H0547: 1, S0146: 1,<br>H0626: 1, L0746: 1,<br>L0756: 1, L0752: 1,<br>L0731: 1, L0758: 1, |  |  |
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|---------|---------|-----|-----------|------|-------------------|---|-----------|---|
| HPCTY12 | 1025231 | 608 | 68 - 1225 | 2783 | Ala-1 to Ser-8.   | S0308: 1, H0595: 1,<br>L0596: 1 and L0599: 1.<br>L0805: 3, H0657: 2,<br>L0769: 2, L0766: 2,<br>L0659: 2, L0809: 2,<br>L0789: 2, L0665: 2,<br>L0565: 2, H0659: 2,<br>L0749: 2, L0777: 2,<br>L0755: 2, L0596: 2,<br>H0685: 1, H0583: 1,<br>H0650: 1, H0656: 1,<br>H0663: 1, S0420: 1,<br>S0356: 1, H0619: 1,<br>L0717: 1, H0586: 1,<br>H0251: 1, H0050: 1,<br>H0622: 1, H0135: 1,<br>H0038: 1, H0551: 1,<br>H0272: 1, H0561: 1,<br>H0509: 1, L0637: 1,<br>L0646: 1, L0794: 1,<br>L0387: 1, L0776: 1,<br>L0655: 1, L0657: 1,<br>L0636: 1, L0666: 1,<br>L0664: 1, H0520: 1,<br>H0547: 1, H0519: 1,<br>H0672: 1, L0593: 1,<br>H0667: 1 and H0352: 1. | 12q12-q13 | 107777,<br>123940,<br>139350,<br>139350,<br>148040,<br>148041,<br>148043,<br>148070,<br>231550,<br>600194,<br>600231,<br>600536,<br>600808,<br>600956,<br>601284,<br>601769,<br>601769,<br>601928,<br>602116,<br>602153 |
| HFASF12 | 1025327 | 609 | 103 - 201 | 2784 | Pro-19 to Cys-28. | L0747: 4, L0757: 4,<br>L0759: 4, L0770: 3,<br>L0769: 2, L0659: 2,   |           |   |



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| HLIBM71 | 1025359 | 610 | 147 - 617 | 2785 | Ser-26 to Ile-35. | H0691: 2, L0750: 2,<br>S0116: 1, H0638: 1,<br>S0300: 1, H0587: 1,<br>L0021: 1, S0474: 1,<br>H0529: 1, L0762: 1,<br>L0764: 1, L0768: 1,<br>L0775: 1, L0776: 1,<br>L0634: 1, L0783: 1,<br>L0663: 1, H0689: 1,<br>H0521: 1, S0027: 1,<br>L0748: 1, L0777: 1,<br>L0752: 1, L0755: 1,<br>L0731: 1, H0445: 1 and<br>H0423: 1.  |  |  |
|         |         |     |           |      |                   | H0556: 4, H0253: 4,<br>H0620: 4, L0731: 3,<br>S0212: 2, H0052: 2,<br>H0124: 2, L0766: 2,<br>L0809: 2, L0565: 2,<br>S0126: 2, S0328: 2,<br>L0603: 2, H0739: 1,<br>S0114: 1, S0218: 1,<br>H0657: 1, S0116: 1,<br>H0638: 1, S0420: 1,<br>S0045: 1, S0046: 1,<br>S0278: 1, H0549: 1,<br>H0550: 1, H0250: 1,<br>H0156: 1, L0738: 1,<br>H0327: 1, H0544: 1,<br>L0471: 1, H0083: 1, |  |  |



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| HNOKW27 | 1025366 | 611 | 3 - 701 | 2786 | Phe-9 to Trp-14,<br>Arg-125 to Asp-148,<br>Ser-156 to Asp-163,<br>Pro-206 to His-211. | H0355: 1, H0416: 1,<br>H0428: 1, L0483: 1,<br>H0181: 1, H0617: 1,<br>H0032: 1, S0364: 1,<br>H0063: 1, H0087: 1,<br>H0264: 1, H0100: 1,<br>H0494: 1, H0560: 1,<br>L0065: 1, H0132: 1,<br>H0131: 1, S0150: 1,<br>H0647: 1, L0770: 1,<br>L0769: 1, L0772: 1,<br>L0764: 1, L0662: 1,<br>L0387: 1, L0657: 1,<br>L0658: 1, L0541: 1,<br>S0052: 1, H0547: 1,<br>H0539: 1, S0406: 1,<br>H0478: 1, H0727: 1,<br>H0732: 1, S0032: 1,<br>L0439: 1, L0740: 1,<br>L0747: 1, L0779: 1,<br>L0755: 1, L0757: 1,<br>L0758: 1, L0759: 1,<br>S0434: 1, S0436: 1,<br>L0581: 1, L0595: 1,<br>H0665: 1, H0423: 1 and<br>S0446: 1. |  |  |
|         |         |     |         |      | L0439: 2, H0687: 1,<br>L0761: 1, L0805: 1,<br>L0438: 1 and H0670: 1.                  |   |  |  |



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| HPFDG48  | 1025526 | 612 | 461 - 303 | 2787 |   | AR089: 2, AR039: 2,<br>AR104: 2, AR053: 2,<br>AR096: 2, AR060: 1,<br>AR033: 1, AR061: 1,<br>AR055: 1<br>L0748: 6, H0169: 1,<br>S0428: 1, S0136: 1,<br>L0754: 1 and L0749: 1.  | Xp11.23-<br>p11.22 | 300008,<br>300008,<br>300008,<br>300008,<br>300047,<br>300071,<br>300110,<br>300600,<br>301000,<br>301000,<br>301830,<br>309470,<br>309500,<br>309610,<br>309850,<br>311050,<br>312060 |
| HVVBFF24 | 1025712 | 613 | 49 - 1296 | 2788 | Ser-1 to Gly-18,<br>Trp-25 to Gly-31,<br>Arg-46 to Ser-52,<br>Ala-103 to Ala-108,<br>Ser-154 to Gly-165,<br>Gln-228 to Pro-236,<br>Ser-284 to Gly-291,<br>Ala-321 to Asp-327,<br>Lys-377 to Asn-394,<br>Asp-406 to Ser-416. | AR089: 13, AR060: 5,<br>AR096: 5, AR104: 5,<br>AR061: 2, AR055: 1<br>S0152: 12, S0356: 10,<br>H0551: 6, H0423: 6,<br>S0212: 5, H0090: 5,<br>H0667: 5, S0358: 4,<br>H0620: 4, H0622: 4,<br>H0591: 4, L0794: 4,<br>S0380: 4, L0731: 4,<br>L0588: 4, S0242: 4,<br>S0360: 3, S0474: 3,<br>H0581: 3, S0126: 3, |                    |  |



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| HE8UF88 | 1025745 | 614 | 4207 - | 2789 | Ala-8 to Arg-14, | S0250: 1, H0615: 1,<br>H0029: 1, H0553: 1,<br>H0644: 1, H0032: 1,<br>H0169: 1, H0316: 1,<br>H0038: 1, H0040: 1,<br>H0634: 1, H0063: 1,<br>T0067: 1, H0477: 1,<br>H0488: 1, H0623: 1,<br>H0494: 1, H0625: 1,<br>L0065: 1, S0438: 1,<br>H0509: 1, S0142: 1,<br>L0770: 1, L0646: 1,<br>L0662: 1, L0653: 1,<br>L0776: 1, L0659: 1,<br>L0526: 1, L0666: 1,<br>S0374: 1, H0693: 1,<br>H0547: 1, H0682: 1,<br>H0435: 1, H0658: 1,<br>H0660: 1, H0648: 1,<br>H0672: 1, S0328: 1,<br>H0710: 1, H0518: 1,<br>H0579: 1, H0704: 1,<br>H0555: 1, S0390: 1,<br>S0037: 1, S0027: 1,<br>L0439: 1, L0747: 1,<br>L0752: 1, L0759: 1,<br>H0444: 1, H0595: 1,<br>L0362: 1, S0011: 1,<br>S0194: 1 and S0384: 1. |  |  |
|         |         |     |        |      |                  | H0547: 10, H0013: 9,   |  |  |



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|--|------|--|--|---|--|--|--|
|  |      |  |  | Ile-64 to Thr-69,<br>Val-94 to Asp-101,<br>His-112 to Gln-117,<br>Tyr-139 to Glu-145,<br>Tyr-195 to Cys-208,<br>Gly-216 to Gly-223,<br>Asp-297 to Ser-307,<br>Gly-378 to Leu-383,<br>Ile-391 to Pro-404,<br>Asn-451 to Ser-466. | L0758: 8, L0771: 6,<br>L0747: 6, S0422: 5,<br>L0770: 5, H0341: 4,<br>S0356: 4, H0486: 4,<br>H0251: 4, H0038: 4,<br>H0040: 4, T0041: 4,<br>L0766: 4, S0152: 4,<br>L0439: 4, H0171: 3,<br>S0360: 3, S0046: 3,<br>H0574: 3, H0024: 3,<br>T0042: 3, S0440: 3,<br>H0529: 3, H0670: 3,<br>S0330: 3, H0539: 3,<br>L0754: 3, L0749: 3,<br>L0779: 3, H0624: 2,<br>S0134: 2, H0583: 2,<br>H0657: 2, S0116: 2,<br>S0418: 2, S0354: 2,<br>S0045: 2, H0318: 2,<br>T0110: 2, H0046: 2,<br>H0266: 2, S0003: 2,<br>H0591: 2, H0634: 2,<br>H0412: 2, H0561: 2,<br>L0768: 2, L0806: 2,<br>L0664: 2, H0144: 2,<br>L0565: 2, H0519: 2,<br>H0659: 2, H0672: 2,<br>S0328: 2, S0378: 2,<br>H0521: 2, H0696: 2,<br>H0345: 2, L0741: 2, |  |  |
|  | 2810 |  |  |   |  |  |  |



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| L0743: 2, L0748: 2,<br>L0751: 2, L0759: 2,<br>L0593: 2, L0595: 2,<br>H0667: 2, H0136: 2,<br>H0423: 2, H0556: 1,<br>S6024: 1, H0661: 1,<br>H0663: 1, S0444: 1,<br>S0278: 1, H0592: 1,<br>H0587: 1, H0497: 1,<br>H0333: 1, H0492: 1,<br>H0427: 1, S0280: 1,<br>H0575: 1, S0474: 1,<br>H0596: 1, H0546: 1,<br>H0123: 1, H0050: 1,<br>L0471: 1, H0373: 1,<br>L0163: 1, H0051: 1,<br>H0083: 1, H0687: 1,<br>H0328: 1, H0688: 1,<br>H0622: 1, T0006: 1,<br>H0169: 1, H0674: 1,<br>H0708: 1, H0598: 1,<br>H0616: 1, H0268: 1,<br>H0623: 1, H0100: 1,<br>L0475: 1, S0438: 1,<br>S0150: 1, H0646: 1,<br>L0369: 1, L0763: 1,<br>L0638: 1, L0646: 1,<br>L0773: 1, L0521: 1,<br>L0662: 1, L0794: 1,<br>L0522: 1, L0803: 1, |
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|         |         |     |                |      |  |  | L0774: 1, L0775: 1,<br>L0776: 1, L0655: 1,<br>L0527: 1, L0558: 1,<br>L0659: 1, L0526: 1,<br>L0789: 1, L0666: 1,<br>H0520: 1, H0689: 1,<br>H0690: 1, H0683: 1,<br>H0660: 1, H0648: 1,<br>S0380: 1, S0406: 1,<br>H0478: 1, H0626: 1,<br>S0027: 1, S0028: 1,<br>L0740: 1, L0786: 1,<br>L0757: 1, S0434: 1,<br>L0596: 1, L0592: 1,<br>S0026: 1, H0542: 1,<br>H0543: 1, S0412: 1,<br>S0424: 1, S0384: 1,<br>S0456: 1 and L0600: 1. |  |  |  |
| HOUBC29 | 1025749 | 615 | 1558 -<br>1259 | 2790 | Leu-11 to Gly-22,<br>Ala-87 to Gly-96. | L0748: 2, L0745: 2,<br>S0040: 1, H0637: 1,<br>H0580: 1, H0553: 1 and<br>L0761: 1.  |   |  |  |  |
| HOCYP47 | 1025965 | 616 | 71 - 1606      | 2791 |  | L0758: 9, S0412: 8,<br>L0749: 6, S0360: 5,<br>H0038: 5, L0662: 5,<br>L0751: 5, S0356: 3,<br>H0618: 3, S0051: 3,<br>H0616: 3, L0666: 3,<br>L0743: 3, L0439: 3,<br>L0731: 3, H0295: 2, |   |  |  |  |



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| H0587: 2, H0135: 2,<br>H0591: 2, L0769: 2,<br>L0774: 2, L0775: 2,<br>L0659: 2, L0665: 2,<br>H0672: 2, S0330: 2,<br>H0539: 2, H0436: 2,<br>L0754: 2, L0588: 2,<br>L0605: 2, H0352: 2,<br>T0002: 1, H0381: 1,<br>S0116: 1, H0341: 1,<br>H0638: 1, H0339: 1,<br>L0717: 1, H0411: 1,<br>H0441: 1, H0586: 1,<br>H0333: 1, H0574: 1,<br>S0280: 1, L0021: 1,<br>H0253: 1, S0010: 1,<br>S0346: 1, S0049: 1,<br>H0085: 1, L0471: 1,<br>H0024: 1, T0010: 1,<br>H0239: 1, H0030: 1,<br>H0031: 1, H0181: 1,<br>H0032: 1, H0361: 1,<br>H0598: 1, H0090: 1,<br>H0100: 1, H0529: 1,<br>L0637: 1, L0772: 1,<br>L0646: 1, L0764: 1,<br>L0771: 1, L0648: 1,<br>L0521: 1, L0767: 1,<br>L0766: 1, L0375: 1,<br>L0378: 1, L0653: 1, |  |
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| HOVKE20 | 1025990 | 617 | 3 - 824 | 2792 | Gln-52 to Thr-58,<br>Pro-105 to Asp-111,<br>Arg-175 to Cys-182,<br>Leu-221 to Val-227,<br>Thr-257 to Gly-264,<br>Ser-266 to Glu-271: | L0657: 1, L0544: 1,<br>L0647: 1, H0435: 1,<br>H0659: 1, H0658: 1,<br>H0670: 1, H0660: 1,<br>H0521: 1, H0696: 1,<br>H0555: 1, H0478: 1,<br>S0037: 1, S0027: 1,<br>L0756: 1, L0777: 1,<br>L0753: 1, H0445: 1,<br>L0596: 1, L0591: 1,<br>S0026: 1 and S0446: 1. | L0618: 12, H0253: 11, 19p13<br>L0777: 8, L0755: 8,<br>L0794: 6, L0659: 6,<br>L0758: 6, S0192: 5,<br>L0743: 4, S0418: 3,<br>L0764: 3, S3014: 3,<br>L0744: 3, S0420: 2,<br>S0046: 2, S0132: 2,<br>H0333: 2, H0486: 2,<br>H0599: 2, T0023: 2,<br>L0774: 2, L0375: 2,<br>H0555: 2, L0754: 2,<br>L0749: 2, L0756: 2,<br>L0731: 2, H0265: 1,<br>H0295: 1, S0298: 1,<br>S0212: 1, H0255: 1,<br>H0661: 1, S0358: 1,<br>H0580: 1, H0645: 1,<br>H0549: 1, H0497: 1, | 601011,<br>601011,<br>601011,<br>601011,<br>601768,<br>601843 |
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|---------|---------|-----|------------|------|--|--|--|---|--|--|--|--|
|         |         |     |            |      |  |  |  | H0492: 1, T0040: 1,<br>H0505: 1, H0545: 1,<br>H0150: 1, H0086: 1,<br>H0123: 1, H0023: 1,<br>H0024: 1, H0014: 1,<br>H0051: 1, H0028: 1,<br>H0615: 1, H0688: 1,<br>H0424: 1, H0031: 1,<br>H0617: 1, H0059: 1,<br>H0494: 1, H0538: 1,<br>L0769: 1, L0637: 1,<br>L0667: 1, L0772: 1,<br>L0804: 1, L0806: 1,<br>L0526: 1, L0809: 1,<br>S0330: 1, S0454: 1,<br>S0027: 1, S0028: 1,<br>L0741: 1, L0740: 1,<br>L0747: 1, L0752: 1,<br>L0757: 1, H0665: 1,<br>S0042: 1 and H0506: 1. |  |  |  |  |
| HODGH47 | 1026139 | 618 | 398 - 1024 | 2793 |  |  |  | H0666: 13, H0620: 7,<br>L0731: 7, L0747: 6,<br>L0659: 5, L0740: 5,<br>L0750: 5, L0757: 5,<br>S0360: 4, H0123: 4,<br>S0022: 4, H0135: 4,<br>L0666: 4, L0665: 4,<br>S0028: 4, L0748: 4,<br>L0777: 4, L0588: 4,<br>S0420: 3, S0358: 3,   |  |  |  |  |



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|--|--|--|--|--|--|
|  | H0208: 3, H0545: 3,<br>H0046: 3, H0284: 3,<br>L0650: 3, L0375: 3,<br>L0382: 3, H0352: 3,<br>H0592: 2, H0544: 2,<br>H0024: 2, H0266: 2,<br>H0286: 2, H0252: 2,<br>H0615: 2, H0428: 2,<br>H0628: 2, H0551: 2,<br>H0100: 2, S0210: 2,<br>L0763: 2, L0770: 2,<br>L0774: 2, L0661: 2,<br>L0518: 2, H0547: 2,<br>H0670: 2, S0037: 2,<br>L0751: 2, L0752: 2,<br>L0755: 2, L0758: 2,<br>L0601: 2, S0194: 2,<br>H0170: 1, H0265: 1,<br>H0686: 1, S0040: 1,<br>H0295: 1, H0341: 1,<br>H0638: 1, S0444: 1,<br>H0580: 1, H0329: 1,<br>S0468: 1, S0046: 1,<br>S0132: 1, S0476: 1,<br>H0619: 1, H0645: 1,<br>L0717: 1, S0278: 1,<br>H0550: 1, H0586: 1,<br>H0333: 1, L0021: 1,<br>H0575: 1, H0253: 1,<br>H0052: 1, H0150: 1, |  |  |  |  |
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|---------|---------|-----|----------------|------|---|--|--|--|--|--|
|         |         |     |                |      |   |  | H0041: 1, H0563: 1,<br>H0081: 1, H0050: 1,<br>L0163: 1, H0051: 1,<br>H0688: 1, H0040: 1,<br>H0634: 1, H0272: 1,<br>H0334: 1, H0633: 1,<br>H0646: 1, L0772: 1,<br>L0800: 1, L0643: 1,<br>L0764: 1, L0662: 1,<br>L0767: 1, L0775: 1,<br>L0651: 1, L0806: 1,<br>L0805: 1, L0776: 1,<br>L0656: 1, L0783: 1,<br>L0809: 1, L0543: 1,<br>L0789: 1, L0663: 1,<br>H0682: 1, H0684: 1,<br>H0659: 1, H0660: 1,<br>H0709: 1, S0152: 1,<br>H0436: 1, H0627: 1,<br>L0611: 1, S0027: 1,<br>L0439: 1, L0745: 1,<br>L0759: 1, L0593: 1,<br>L0361: 1, L0603: 1,<br>H0668: 1, S0026: 1 and<br>H0667: 1. |  |  |  |
| HODBK27 | 1026372 | 619 | 87 - 497       | 2794 |   |  | H0328: 2, H0656: 1<br>and H0538: 1.  |  |  |  |
| HE8CH59 | 1026805 | 620 | 1889 -<br>2770 | 2795 | Tyr-1 to Pro-8,<br>Asp-21 to Lys-28,<br>Arg-30 to Ile-38, |  | H0583: 2, L0744: 2,<br>L0747: 2, H0650: 1,<br>H0656: 1, S0356: 1,  |  |  |  |



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|---------|---------|-----|---------|------|---|--|--|--|
| HSKGR52 | 1026911 | 621 | 2 - 625 | 2796 | <p>Asn-71 to Gln-76,<br/>Val-85 to Pro-101,<br/>Ser-104 to Arg-111,<br/>His-123 to Arg-128,<br/>Glu-146 to Arg-152,<br/>Val-155 to Asp-271,<br/>Leu-274 to Gly-279,<br/>Ser-283 to Glu-290.</p> <p>Asn-53 to Arg-58,<br/>Asp-79 to Tyr-89,<br/>Pro-98 to Pro-108,<br/>Lys-195 to Lys-200.</p> | <p>H0013: 1, H0590: 1,<br/>H0581: 1, H0251: 1,<br/>H0266: 1, H0328: 1,<br/>H0615: 1, H0135: 1,<br/>H0488: 1, H0538: 1,<br/>L0521: 1, H0539: 1,<br/>H0522: 1, S0028: 1,<br/>L0366: 1 and H0677: 1.</p> <p>AR052: 91, AR096:<br/>79, AR053: 69, AR039:<br/>64, AR089: 46, AR060:<br/>39, AR033: 35, AR104:<br/>32, AR055: 14, AR061:<br/>10<br/>L0805: 22, L0794: 15,<br/>L0766: 12, L0747: 12,<br/>L0803: 11, L0740: 11,<br/>L0779: 11, L0776: 9,<br/>L0769: 7, H0521: 7,<br/>L0439: 7, L0731: 7,<br/>L0605: 7, S0474: 6,<br/>S0422: 6, L0752: 6,<br/>L0665: 5, L0748: 5,<br/>L0758: 5, H0618: 4,<br/>S0010: 4, L0771: 4,<br/>L0789: 4, S3014: 4,<br/>H0341: 3, H0615: 3,<br/>H0708: 3, L0763: 3,<br/>L0804: 3, L0659: 3,<br/>L0809: 3, S0052: 3,</p> |  |  |
|---------|---------|-----|---------|------|---|--|--|--|



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| L0438: 3, H0658: 3,<br>H0436: 3, L0759: 3,<br>S0360: 2, S0222: 2,<br>H0574: 2, H0599: 2,<br>H0196: 2, H0050: 2,<br>H0266: 2, H0135: 2,<br>H0038: 2, H0616: 2,<br>L0770: 2, H0144: 2,<br>S0374: 2, L0352: 2,<br>H0682: 2, H0670: 2,<br>L0743: 2, L0744: 2,<br>L0751: 2, L0749: 2,<br>L0750: 2, L0756: 2,<br>S0424: 2, H0624: 1,<br>T0002: 1, T0049: 1,<br>H0657: 1, L0785: 1,<br>H0671: 1, S0442: 1,<br>S0444: 1, S0408: 1,<br>H0733: 1, S0278: 1,<br>H0431: 1, H0013: 1,<br>S0280: 1, H0581: 1,<br>S0049: 1, H0052: 1,<br>H0251: 1, L0040: 1,<br>H0123: 1, L0471: 1,<br>H0630: 1, H0375: 1,<br>S0003: 1, H0252: 1,<br>L0483: 1, T0006: 1,<br>H0644: 1, H0673: 1,<br>S0036: 1, H0163: 1,<br>H0040: 1, H0551: 1, |
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|         |         |     |         |      |                 |   |  |  |
|---------|---------|-----|---------|------|-----------------|---|--|--|
|         |         |     |         |      |                 | H0412: 1, H0413: 1,<br>S0038: 1, H0509: 1,<br>H0131: 1, S0344: 1,<br>L0598: 1, L0369: 1,<br>L0638: 1, L0667: 1,<br>L0662: 1, L0363: 1,<br>L0768: 1, L0775: 1,<br>L0375: 1, L0806: 1,<br>L0653: 1, L0655: 1,<br>L0666: 1, S0126: 1,<br>H0689: 1, H0684: 1,<br>H0660: 1, H0672: 1,<br>S0380: 1, H0710: 1,<br>H0522: 1, S0146: 1,<br>S3012: 1, S0027: 1,<br>S0028: 1, L0745: 1,<br>L0780: 1, L0753: 1,<br>H0445: 1, L0362: 1,<br>L0361: 1, H0653: 1,<br>H0423: 1 and H0506: 1. |  |  |
| HMUAQ05 | 1026913 | 622 | 3 - 218 | 2797 | Pro-2 to Pro-8. | S0354: 2, H0615: 2,<br>L0591: 2, S0356: 1,<br>S0442: 1, S0360: 1,<br>S0222: 1, H0362: 1,<br>H0156: 1, H0036: 1,<br>H0012: 1, H0014: 1,<br>S0051: 1, T0010: 1,<br>H0529: 1, S0126: 1,<br>L0439: 1, L0755: 1 and<br>L0608: 1.   |  |  |



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|---------|---------|-----|-----------|------|-------------------|---|---|--|--|
| HCOMA45 | 1026979 | 623 | 536 - 447 | 2798 | Glu-13 to Gly-18. | H0662: 1, S0046: 1,<br>H0658: 1 and H0670: 1.   |   |  |  |
| HE2KI45 | 1027007 | 624 | 3 - 1565  | 2799 |                   | L0803: 12, H0581: 8,<br>S0358: 6, H0046: 6,<br>H0428: 6, S0356: 5,<br>S0007: 5, H0031: 4,<br>L0665: 4, H0271: 3,<br>H0038: 3, L0794: 3,<br>L0804: 3, L0666: 3,<br>H0693: 3, S0406: 3,<br>L0756: 3, L0758: 3,<br>L0592: 3, S0116: 2,<br>S0444: 2, H0431: 2,<br>H0586: 2, H0486: 2,<br>L0471: 2, H0615: 2,<br>H0039: 2, S0036: 2,<br>H0616: 2, S0422: 2,<br>H0529: 2, L0770: 2,<br>L0521: 2, L0662: 2,<br>L0776: 2, L0787: 2,<br>L0438: 2, H0670: 2,<br>H0660: 2, S0328: 2,<br>S0330: 2, H0436: 2,<br>L0748: 2, L0755: 2,<br>L0485: 2, L0599: 2,<br>S0192: 2, H0423: 2,<br>H0624: 1, S0342: 1,<br>S0114: 1, H0650: 1,<br>H0657: 1, H0638: 1,<br>S0354: 1, S0360: 1, | 1 |  |  |



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|  | S0408: 1, S0410: 1,<br>H0329: 1, S0045: 1,<br>S0046: 1, S0278: 1,<br>H0441: 1, H0497: 1,<br>H0331: 1, T0109: 1,<br>S0280: 1, H0705: 1,<br>H0318: 1, S0474: 1,<br>T0110: 1, H0565: 1,<br>H0572: 1, H0050: 1,<br>H0687: 1, S0003: 1,<br>H0553: 1, H0488: 1,<br>H0412: 1, T0041: 1,<br>H0494: 1, S0438: 1,<br>S0440: 1, S0144: 1,<br>H0517: 1, L0763: 1,<br>L0772: 1, L0372: 1,<br>L0800: 1, L0764: 1,<br>L0364: 1, L0649: 1,<br>L0774: 1, L0523: 1,<br>L0805: 1, L0655: 1,<br>L0807: 1, L0527: 1,<br>L0659: 1, L0809: 1,<br>L0663: 1, L0664: 1,<br>S0428: 1, S0053: 1,<br>H0144: 1, S0374: 1,<br>H0520: 1, H0519: 1,<br>S0126: 1, H0682: 1,<br>H0435: 1, H0648: 1,<br>H0672: 1, S0378: 1,<br>H0521: 1, S0044: 1, |  |  |  |  |  |
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|         |         |     |           |      |  |  |  |             |                    |  |
|---------|---------|-----|-----------|------|--|--|--|-------------|--------------------|--|
|         |         |     |           |      |  |  | H0478: 1, H0627: 1,<br>H0631: 1, S0027: 1,<br>L0740: 1, L0747: 1,<br>L0749: 1, L0777: 1,<br>L0752: 1, H0445: 1,<br>S0436: 1, L0591: 1,<br>S0196: 1, H0543: 1,<br>S0424: 1, S0462: 1,<br>S0446: 1 and H0506: 1.                                     |             |                    |  |
| HODDO66 | 1027207 | 625 | 2 - 136   | 2800 |  |  | H0667: 3, S0222: 2,<br>H0013: 2, L0438: 2,<br>H0265: 1, H0583: 1,<br>S0280: 1, H0036: 1,<br>H0318: 1, L0471: 1,<br>H0266: 1, H0328: 1,<br>H0553: 1, S0364: 1,<br>H0038: 1, H0040: 1,<br>H0488: 1, L0796: 1,<br>H0144: 1, H0684: 1 and<br>H0423: 1. | 2p11.2      | 178640,<br>216900  |  |
| HVVAT45 | 1027269 | 626 | 71 - 1117 | 2801 | Pro-1 to Leu-8,<br>Arg-41 to Gly-48,<br>Ile-73 to Cys-80,<br>Ala-137 to Tyr-144,<br>Lys-193 to Ala-208,<br>Leu-254 to Leu-259,<br>Ala-317 to Ala-323,<br>Glu-343 to Phe-349. |  |  |             |                    |  |
| HVCAG18 | 1027484 | 627 | 1 - 393   | 2802 | Leu-46 to Thr-53,<br>Pro-80 to Ser-86,   |  | H0690: 1, H0683: 1,<br>H0666: 1 and S0328: 1.  | 20q12-q13.2 | 118504,<br>118504, |  |



|         |         |     |          |      |  |  |  |   |   |
|---------|---------|-----|----------|------|--|--|--|---|---|
|         |         |     |          |      | Arg-101 to Gly-112,<br>Lys-115 to Gly-122.   |  |  |   | 131242,<br>139320,<br>139320,<br>139320,<br>139320,<br>600281,<br>600281,<br>602025 |
| HPTXK72 | 1027486 | 628 | 52 - 462 | 2803 | Leu-52 to Thr-59,<br>Pro-86 to Ser-92,<br>Arg-107 to Gly-118,<br>Lys-121 to Gly-128. |  |  | L0751: 29, H0549: 17,<br>H0550: 17, L0666: 9,<br>L0747: 8, H0689: 7,<br>H0690: 7, H0682: 7,<br>H0615: 6, H0670: 6,<br>H0328: 5, H0150: 4,<br>H0660: 4, S0330: 4,<br>S0044: 4, L0362: 4,<br>H0597: 3, H0688: 3,<br>L0764: 3, L0657: 3,<br>L0809: 3, L0753: 3,<br>L0758: 3, L0759: 3,<br>H0431: 2, H0046: 2,<br>T0067: 2, H0059: 2,<br>H0647: 2, L0774: 2,<br>L0805: 2, L0783: 2,<br>L0438: 2, H0593: 2,<br>H0648: 2, H0672: 2,<br>S0328: 2, S0404: 2,<br>L0744: 2, L0779: 2,<br>S0436: 2, H0662: 1,<br>S0442: 1, S0444: 1, |   |



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|---------|---------|-----|-----------|------|--|--|---|-------------------|--|
|         |         |     |           |      |  |  | S0408: 1, S0007: 1,<br>H0461: 1, H0085: 1,<br>H0009: 1, S0024: 1,<br>H0188: 1, H0039: 1,<br>H0604: 1, H0424: 1,<br>H0169: 1, H0674: 1,<br>L0520: 1, L5569: 1,<br>L0803: 1, L0804: 1,<br>L0775: 1, L0658: 1,<br>L0634: 1, L0542: 1,<br>L0528: 1, L2269: 1,<br>L0663: 1, L0665: 1,<br>H0684: 1, H0659: 1,<br>H0658: 1, S0380: 1,<br>S0406: 1, H0555: 1 and<br>L0780: 1. |                   |  |
| HHSGW78 | 1028405 | 629 | 150 - 404 | 2804 |  |  | H0306: 1 and S0388: 1.5q11.1  | 253200,<br>600887 |  |
| HDTLR06 | 1029191 | 630 | 3 - 1013  | 2805 |  |  | AR053: 5, AR089: 5,<br>AR096: 4, AR039: 4,<br>AR060: 3, AR104: 2,<br>AR055: 2, AR033: 2,<br>AR061: 1<br>L0731: 15, L0754: 14,<br>H0616: 9, L0766: 8,<br>L0758: 8, L0777: 7,<br>H0266: 5, L0752: 5,<br>S0358: 4, S0422: 4,<br>L0518: 4, H0547: 4,<br>S0406: 4, H0013: 3,   |                   |  |







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|  | H0050: 1, H0014: 1,<br>H0373: 1, S0051: 1,<br>H0510: 1, H0328: 1,<br>H0688: 1, H0031: 1,<br>H0644: 1, H0040: 1,<br>H0063: 1, H0488: 1,<br>L0475: 1, S0440: 1,<br>H0641: 1, H0649: 1,<br>H0652: 1, H0529: 1,<br>L0369: 1, L0762: 1,<br>L0763: 1, L0767: 1,<br>L0649: 1, L0803: 1,<br>L0650: 1, L0806: 1,<br>L0805: 1, L0607: 1,<br>L0657: 1, L0783: 1,<br>L0809: 1, L0530: 1,<br>L0793: 1, L0666: 1,<br>L0665: 1, S0148: 1,<br>S0126: 1, H0683: 1,<br>H0658: 1, H0670: 1,<br>H0660: 1, S0380: 1,<br>S0152: 1, S0454: 1,<br>H0521: 1, H0696: 1,<br>S0188: 1, S0392: 1,<br>H0626: 1, S0390: 1,<br>L0759: 1, H0444: 1,<br>S0308: 1, S0026: 1,<br>H0667: 1, S0194: 1,<br>H0542: 1, H0543: 1,<br>S0412: 1 and H0506: 1. |  |
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|---------|---------|-----|------------|------|---|--|--|--|
| HPAMG11 | 1029484 | 631 | 1328 - 663 | 2806 | Pro-32 to Lys-38,<br>Ser-201 to Pro-211,<br>Glu-217 to Glu-222.   | H0413: 2, H0556: 1,<br>H0638: 1, S0376: 1,<br>H0457: 1, H0009: 1,<br>H0519: 1, H0682: 1,<br>H0672: 1, L0748: 1,<br>L0759: 1 and H0445: 1.  |  |  |
| HSDJR27 | 1030870 | 632 | 1758 - 622 | 2807 | Gln-8 to Arg-27,<br>Val-34 to Asn-39,<br>Tyr-65 to Gly-75,<br>Glu-80 to Lys-87,<br>Thr-207 to Gly-218,<br>Thr-245 to Gln-250,<br>Leu-256 to Thr-263,<br>Leu-273 to Thr-281,<br>Lys-289 to Leu-296,<br>Ser-323 to Asn-330. | L0665: 3, L0777: 3,<br>L0717: 2, L0776: 2,<br>L0438: 2, L0756: 2,<br>L0752: 2, S0116: 1,<br>H0661: 1, H0339: 1,<br>H0549: 1, H0587: 1,<br>H0688: 1, H0553: 1,<br>L0351: 1, S0422: 1,<br>L0437: 1, L0769: 1,<br>L0637: 1, L0771: 1,<br>L0662: 1, L0794: 1,<br>L0766: 1, L0655: 1,<br>L0787: 1, L0789: 1,<br>L0664: 1, L0352: 1,<br>H0659: 1, L0748: 1,<br>L0754: 1, L0779: 1,<br>L0731: 1, L0758: 1,<br>S0260: 1, L0480: 1,<br>L0596: 1 and L0608: 1. |  |  |
| HOCPL33 | 1030871 | 633 | 1032 - 571 | 2808 | Asp-1 to Gly-6,<br>Pro-14 to Trp-35,<br>Arg-37 to Gly-45,<br>Ser-63 to Pro-72,<br>Pro-87 to Arg-100,  | L0770: 4, L0439: 4,<br>L0438: 3, H0670: 3,<br>L0748: 3, L0740: 3,<br>H0538: 2, L0777: 2,<br>S0342: 1, S0110: 1,  |  |  |



|         |         |     |           |      |                     |  |  |  |
|---------|---------|-----|-----------|------|---------------------|--|--|--|
|         |         |     |           |      | Pro-102 to Gly-107. | S0354: 1, S0444: 1,<br>S0360: 1, H0729: 1,<br>H0728: 1, H0734: 1,<br>H0619: 1, H0549: 1,<br>H0550: 1, H0587: 1,<br>H0427: 1, H0253: 1,<br>H0023: 1, T0010: 1,<br>H0039: 1, H0674: 1,<br>H0135: 1, H0488: 1,<br>H0494: 1, S0015: 1,<br>H0647: 1, S0210: 1,<br>L0763: 1, L0800: 1,<br>L0644: 1, L0521: 1,<br>L0768: 1, L0775: 1,<br>L0805: 1, L0659: 1,<br>L0782: 1, L0783: 1,<br>L0528: 1, L0789: 1,<br>L0791: 1, L0793: 1,<br>L0532: 1, H0725: 1,<br>H0659: 1, H0658: 1,<br>H0660: 1, S0013: 1,<br>S0037: 1, S0206: 1,<br>L0751: 1, L0605: 1,<br>L0485: 1, L0599: 1 and<br>S0026: 1. |  |  |
| HPCQN80 | 1030963 | 634 | 86 - 2158 | 2809 |                     | L0803: 4, L0777: 4,<br>L0758: 4, L0804: 3,<br>L0659: 3, L0752: 3,<br>S0408: 2, L0717: 2,<br>L0598: 2, L0770: 2,  |  |  |



|         |         |     |        |      |  |  |                     |  |
|---------|---------|-----|--------|------|--|--|---------------------|--|
| HODEJ22 | 1031076 | 635 | 1561 - | 2810 |  | L0662: 2, L0661: 2,<br>L0657: 2, L0526: 2,<br>L0664: 2, H0659: 2,<br>H0648: 2, L0748: 2,<br>L0751: 2, L0749: 2,<br>L0779: 2, S0040: 1,<br>H0713: 1, S0356: 1,<br>S0442: 1, S0360: 1,<br>H0393: 1, H0351: 1,<br>H0441: 1, H0486: 1,<br>H0581: 1, H0123: 1,<br>H0050: 1, S0051: 1,<br>H0673: 1, S0438: 1,<br>S0144: 1, L0520: 1,<br>L0763: 1, L0371: 1,<br>L0637: 1, L5566: 1,<br>L0800: 1, L0764: 1,<br>L0773: 1, L0649: 1,<br>L0381: 1, L0774: 1,<br>L0375: 1, L0806: 1,<br>L0653: 1, L0776: 1,<br>L0809: 1, L0530: 1,<br>L0788: 1, L0666: 1,<br>H0521: 1, H0555: 1,<br>S0032: 1, L0740: 1,<br>L0745: 1, L0750: 1,<br>L0756: 1, L0757: 1,<br>L0591: 1, L0581: 1 and<br>H0506: 1. | L0766: 6, L0804: 5, |  |
|---------|---------|-----|--------|------|--|--|---------------------|--|



|         |         |     |           |      |   |   |      |   |  |
|---------|---------|-----|-----------|------|---|---|------|---|--|
|         |         |     | 1307      |      |   | L0748: 5, L0666: 4,<br>L0663: 4, L0634: 3,<br>L0740: 3, H0445: 3,<br>H0318: 2, H0046: 2,<br>H0615: 2, H0428: 2,<br>L0761: 2, L0775: 2,<br>L0665: 2, H0658: 2,<br>H0583: 1, H0656: 1,<br>S0001: 1, H0637: 1,<br>H0090: 1, H0038: 1,<br>S0002: 1, L0520: 1,<br>L0638: 1, L0649: 1,<br>L0527: 1, L0657: 1,<br>L0559: 1, L0647: 1,<br>L0664: 1, S0052: 1,<br>S0428: 1, H0682: 1,<br>H0660: 1, H0555: 1 and<br>L0751: 1. |      |   |  |
| HODFZ16 | 1031085 | 636 | 340 - 498 | 2811 | Phe-3 to Ala-23.  | L0766: 2, L0748: 2,<br>S0116: 1, L0005: 1,<br>H0615: 1, H0529: 1,<br>L0792: 1 and H0521: 1.   |      |   |  |
| HWGAE28 | 1031316 | 637 | 1 - 2271  | 2812 | Cys-1 to Arg-6,<br>Thr-84 to Thr-97,<br>Arg-131 to Trp-136,<br>Ser-155 to Gly-160,<br>Thr-187 to Glu-201. | L0439: 9, H0519: 6,<br>L0665: 5, H0547: 5,<br>L0755: 5, S0434: 5,<br>H0529: 4, L0659: 4,<br>S0358: 3, S0010: 3,<br>L0731: 3, L0599: 3,<br>L0595: 3, H0422: 3,<br>H0657: 2, H0581: 2,  | 2p24 | 107730,<br>107730,<br>107730,<br>107730,<br>182601,<br>602134 |  |



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|         |         |     |            |      |  |   |  |                   |                   |  |
|---------|---------|-----|------------|------|--|---|--|-------------------|-------------------|--|
|         |         |     |            |      |  |   | L0804: 1, L0650: 1,<br>L0654: 1, L0661: 1,<br>L0656: 1, L0526: 1,<br>L0790: 1, L0666: 1,<br>L0565: 1, H0520: 1,<br>H0690: 1, H0435: 1,<br>H0659: 1, H0670: 1,<br>H0660: 1, H0696: 1,<br>H0704: 1, S0406: 1,<br>H0555: 1, S3014: 1,<br>S0028: 1, L0740: 1,<br>L0779: 1, L0777: 1,<br>L0780: 1, L0592: 1,<br>L0608: 1, L0362: 1,<br>H0665: 1, S0194: 1,<br>H0542: 1, H0423: 1 and<br>L0465: 1. |                   |                   |  |
| HOFNZ21 | 1031328 | 638 | 109 - 456  | 2813 | Arg-1 to Gly-6.  |   | H0415: 2   | 9p13-p12          | 230400,<br>250250 |  |
| HOOKH25 | 1031329 | 639 | 231 - 2696 | 2814 | Ala-4 to Glu-13,<br>Ala-21 to Asp-27,<br>Lys-34 to Asn-40,<br>Asp-91 to Ile-98,<br>Pro-122 to Lys-128,<br>Arg-160 to Gly-165,<br>Glu-203 to Ser-213,<br>Gly-218 to Cys-225,<br>Ser-298 to Lys-304,<br>Glu-307 to Asn-312,<br>Pro-327 to His-333, | L0747: 8, L0659: 7,<br>L0776: 5, L0770: 4,<br>L0662: 4, L0768: 4,<br>L0775: 4, L0752: 4,<br>L0603: 4, H0556: 3,<br>S0410: 3, L0665: 3,<br>L0439: 3, L0750: 3,<br>S0356: 2, S0408: 2,<br>L0471: 2, H0271: 2,<br>S0440: 2, L0762: 2,<br>L0769: 2, L0372: 2, | 9p13-p12   | 230400,<br>250250 |                   |  |



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|---|--|
| Thr-363 to Ser-368,<br>Arg-375 to Val-383,<br>Asp-500 to Leu-505,<br>Arg-602 to Asp-608,<br>Glu-722 to Ser-734,<br>Glu-739 to Val-744,<br>Glu-746 to His-751,<br>Leu-778 to Phe-784,<br>Pro-790 to Gly-795,<br>Ala-797 to Thr-807,<br>Tyr-812 to Tyr-821. | L0646: 2, L0764: 2,<br>L0773: 2, L0766: 2,<br>L0649: 2, L0655: 2,<br>L0663: 2, L0664: 2,<br>H0144: 2, L0565: 2,<br>H0547: 2, H0690: 2,<br>H0659: 2, L0602: 2,<br>S0404: 2, L0754: 2,<br>L0749: 2, L0777: 2,<br>L0758: 2, L0596: 2,<br>H0657: 1, S0001: 1,<br>H0484: 1, H0638: 1,<br>S0418: 1, S0444: 1,<br>L0717: 1, H0333: 1,<br>H0156: 1, H0052: 1,<br>H0545: 1, H0012: 1,<br>H0083: 1, H0687: 1,<br>H0674: 1, H0090: 1,<br>H0063: 1, H0264: 1,<br>H0100: 1, L0434: 1,<br>L0351: 1, H0494: 1,<br>H0561: 1, S0466: 1,<br>H0641: 1, H0529: 1,<br>L0763: 1, L0761: 1,<br>L0667: 1, L0363: 1,<br>L0650: 1, L0653: 1,<br>L0654: 1, L0379: 1,<br>L0607: 1, L0807: 1,<br>L0635: 1, L0783: 1,<br>L0383: 1, L0809: 1, |
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|---------|---------|-----|----------|------|--|--|--|---|--|--|--|
|         |         |     |          |      |  |  |  | L0666: 1, H0658: 1,<br>H0670: 1, H0648: 1,<br>H0521: 1, S0406: 1,<br>L0748: 1, L0731: 1,<br>L0593: 1, L0595: 1,<br>S0026: 1, S0276: 1 and<br>H0422: 1.  |  |  |  |
| HDTIL75 | 1031435 | 640 | 1 - 1092 | 2815 |  | Gly-1 to Arg-6,<br>Glu-26 to Gly-31,<br>Gln-70 to Trp-75.  |  | S0410: 8, H0620: 5,<br>H0012: 2, S0040: 1,<br>S0358: 1, S0132: 1,<br>H0486: 1, H0706: 1,<br>H0031: 1, H0628: 1,<br>H0316: 1, S0036: 1,<br>H0090: 1, H0038: 1,<br>H0131: 1, S0144: 1,<br>L0774: 1, L0789: 1,<br>L0666: 1, H0144: 1,<br>L0438: 1, H0435: 1,<br>H0672: 1, S0328: 1,<br>H0539: 1, L0731: 1,<br>S0436: 1 and H0665: 1. |  |  |  |
| HPRSB55 | 1031451 | 641 | 3 - 1751 | 2816 |  | Cys-18 to Lys-24,<br>Gly-57 to Gly-63,<br>Lys-72 to Ile-81,<br>Cys-88 to Glu-93,<br>Gly-97 to Glu-116,<br>Thr-121 to Val-129,<br>Lys-137 to Lys-150,<br>Thr-156 to Asp-161,<br>Gly-177 to Leu-182, |  | L0766: 4, L0758: 4,<br>L0773: 3, L0748: 3,<br>L0751: 3, L0731: 3,<br>L0759: 3, H0171: 2,<br>H0013: 2, H0644: 2,<br>H0616: 2, H0633: 2,<br>L0805: 2, L0659: 2,<br>L0666: 2, L0665: 2,<br>L0754: 2, L0779: 2,   |  |  |  |



|         |         |     |           |      |   |   |    |  |  |
|---------|---------|-----|-----------|------|---|---|----|--|--|
|         |         |     |           |      | Glu-213 to Leu-229,<br>Asp-275 to Arg-281,<br>Asp-287 to Trp-299,<br>Lys-302 to Arg-316,<br>Leu-338 to Ser-343. | S6024: 1, S0212: 1,<br>S0354: 1, S0046: 1,<br>T0039: 1, H0599: 1,<br>H0575: 1, H0036: 1,<br>T0110: 1, H0046: 1,<br>H0050: 1, L0471: 1,<br>H0355: 1, H0271: 1,<br>H0687: 1, H0553: 1,<br>H0166: 1, H0212: 1,<br>H0211: 1, H0264: 1,<br>H0272: 1, H0100: 1,<br>H0494: 1, S0002: 1,<br>L0637: 1, L0627: 1,<br>L0645: 1, L0764: 1,<br>L0803: 1, L0774: 1,<br>L0653: 1, L0606: 1,<br>L0790: 1, L0664: 1,<br>H0435: 1, H0660: 1,<br>H0648: 1, H0521: 1,<br>L0439: 1, L0747: 1,<br>L0749: 1, L0750: 1,<br>L0752: 1 and L0596: 1. |    |  |  |
| HPDPY36 | 1031606 | 642 | 482 - 757 | 2817 | Pro-33 to Pro-40,<br>Pro-47 to Met-56.  | L0471: 1, H0617: 1,<br>L0761: 1, L0768: 1,<br>H0658: 1, L0754: 1 and<br>L0779: 1.   | 12 |  |  |
| HETFJ47 | 1031922 | 643 | 3 - 1328  | 2818 |   | AR060: 4, AR089: 2,<br>AR061: 1, AR096: 1,<br>AR033: 0, AR039: 0,<br>AR053: 0 AR052: 0  |    |  |  |



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|  | L0596: 7, H0622: 5,<br>L0747: 5, H0046: 4,<br>L0372: 4, L0764: 3,<br>L0662: 3, L0657: 3,<br>L0783: 3, L0663: 3,<br>L0752: 3, H0662: 2,<br>S0356: 2, H0040: 2,<br>H0538: 2, L0646: 2,<br>L0771: 2, L0774: 2,<br>L0805: 2, L0809: 2,<br>L0666: 2, L0665: 2,<br>H0435: 2, H0672: 2,<br>L0748: 2, L0751: 2,<br>L0777: 2, L0608: 2,<br>H0624: 1, H0686: 1,<br>H0295: 1, H0241: 1,<br>S0418: 1, S0358: 1,<br>S0376: 1, S0360: 1,<br>S0132: 1, H0642: 1,<br>H0590: 1, H0150: 1,<br>H0620: 1, H0023: 1,<br>H0356: 1, H0424: 1,<br>H0213: 1, H0617: 1,<br>H0169: 1, H0634: 1,<br>H0063: 1, T0067: 1,<br>H0488: 1, H0334: 1,<br>S0370: 1, S0440: 1,<br>H0652: 1, L0645: 1,<br>L0773: 1, L0648: 1,<br>L0806: 1, L0776: 1, |  |
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|---------|---------|-----|-----------|------|--|--|--|--|--|--|
| HMAMI21 | 1031988 | 644 | 14 - 1222 | 2819 |  |  |  | L0541: 1, L0789: 1,<br>L0790: 1, L0664: 1,<br>S0374: 1, H0689: 1,<br>H0666: 1, H0478: 1,<br>L0779: 1, S0436: 1,<br>H0506: 1 and H0712: 1.<br>AR096: 10, AR089:<br>10, AR060: 7, AR104:<br>6, AR033: 5, AR053:<br>5, AR039: 4, AR061:<br>3, AR055: 3<br>L0803: 9, H0648: 5,<br>H0046: 3, L0805: 3,<br>L0731: 3, S0444: 2,<br>S0360: 2, S0476: 2,<br>H0597: 2, H0412: 2,<br>L0764: 2, L0809: 2,<br>H0670: 2, L0740: 2,<br>L0747: 2, L0756: 2,<br>L0777: 2, S0040: 1,<br>T0049: 1, S0420: 1,<br>S0358: 1, S0376: 1,<br>H0580: 1, L0152: 1,<br>S0045: 1, S0278: 1,<br>H0261: 1, S0280: 1,<br>H0618: 1, H0012: 1,<br>H0266: 1, H0488: 1,<br>H0268: 1, S0144: 1,<br>S0344: 1, S0426: 1,<br>L0638: 1, L0646: 1, |  |  |
|---------|---------|-----|-----------|------|--|--|--|--|--|--|



|         |         |     |           |      |   |   |      |  |   |
|---------|---------|-----|-----------|------|---|---|------|--|---|
| HCOQQ85 | 1032475 | 645 | 343 - 672 | 2820 | Arg-37 to Ser-44,<br>Leu-68 to Lys-73,<br>Val-77 to Lys-84,<br>Glu-98 to Lys-110. | L0794: 1, L0804: 1,<br>L0774: 1, L0666: 1,<br>L0664: 1, L0665: 1,<br>S0052: 1, S0374: 1,<br>H0658: 1, H0651: 1,<br>S0028: 1, L0779: 1,<br>L0780: 1, L0755: 1,<br>L0759: 1, H0445: 1 and<br>S0276: 1.  |      |  |   |
|         |         |     |           |      |   | L0775: 9, S0126: 9,<br>L0747: 9, H0617: 7,<br>L0750: 7, L0731: 7,<br>H0670: 5, L0740: 5,<br>L0770: 4, L0769: 4,<br>L0768: 4, L0783: 4,<br>L0752: 4, T0023: 3,<br>L0764: 3, L0653: 3,<br>L0776: 3, H0672: 3,<br>S0046: 2, T0039: 2,<br>H0318: 2, H0251: 2,<br>H0545: 2, H0012: 2,<br>H0373: 2, S0388: 2,<br>H0266: 2, H0087: 2,<br>H0100: 2, H0280: 2,<br>L0368: 2, L0753: 2,<br>L0755: 2, L0757: 2,<br>H0595: 2, L0590: 2,<br>L0592: 2, S6024: 1,<br>H0255: 1, H0664: 1,<br>H0177: 1, S0360: 1. | 1q21 |  | 104770,<br>107670,<br>110700,<br>135940,<br>145001,<br>146790,<br>152445,<br>152445,<br>159001,<br>174000,<br>179755,<br>182860,<br>182860,<br>182860,<br>191315,<br>230800, ---<br>230800,<br>266200,<br>600897,<br>601105,<br>601412. |



|         |         |     |            |      |   |  |  |                   |
|---------|---------|-----|------------|------|---|--|--|-------------------|
| HE2DQ62 | 1033653 | 646 | 1515 - 796 | 2821 | Arg-1 to Ala-7,<br>Glu-98 to Asp-103,<br>Glu-109 to Asp-115,<br>Leu-141 to Glu-146,<br>Glu-172 to Arg-180 | S0408: 1, H0411: 1,<br>H0298: 1, L0622: 1,<br>T0040: 1, L0021: 1,<br>S0049: 1, H0052: 1,<br>H0263: 1, H0597: 1,<br>H0620: 1, T0003: 1,<br>L0163: 1, H0594: 1,<br>H0252: 1, H0606: 1,<br>H0163: 1, S0464: 1,<br>S0438: 1, H0652: 1,<br>L0598: 1, L0763: 1,<br>L0773: 1, L0375: 1,<br>L0629: 1, L0628: 1,<br>L0659: 1, L0518: 1,<br>L0545: 1, L0541: 1,<br>L0788: 1, L0665: 1,<br>H0144: 1, H0691: 1,<br>H0682: 1, H0658: 1,<br>H0660: 1, H0648: 1,<br>S0330: 1, S0380: 1,<br>S0027: 1, L0748: 1,<br>L0754: 1, L0756: 1,<br>L0780: 1, L0758: 1,<br>L0759: 1, L0462: 1 and<br>H0352: 1. |  | 601652,<br>602491 |
|---------|---------|-----|------------|------|---|--|--|-------------------|



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|---------|---------|-----|-----------|------|--|--|---|--|--|--|
|         |         |     |           |      |  |  | H0660: 2, H0672: 2,<br>S0031: 2, L0588: 2,<br>H0624: 1, H0170: 1,<br>H0265: 1, H0556: 1,<br>H0295: 1, H0583: 1,<br>H0657: 1, H0662: 1,<br>S0356: 1, S0354: 1,<br>S0360: 1, H0637: 1,<br>S0046: 1, L0717: 1,<br>H0550: 1, H0013: 1,<br>H0086: 1, H0011: 1,<br>H0510: 1, H0494: 1,<br>H0646: 1, H0529: 1,<br>L0502: 1, L0770: 1,<br>L0638: 1, L0761: 1,<br>L0521: 1, L0528: 1,<br>L0666: 1, L0665: 1,<br>H0144: 1, S0374: 1,<br>H0519: 1, H0659: 1,<br>S0380: 1, H0704: 1,<br>S0028: 1, L0747: 1,<br>L0779: 1, L0777: 1,<br>H0653: 1, S0194: 1 and<br>S0276: 1. |  |  |  |
| HEBAE89 | 1034320 | 647 | 179 - 400 | 2822 | Pro-20 to Phe-32,<br>Pro-52 to Phe-59,<br>Lys-68 to His-74.  |  | S0007: 5, S0010: 1,<br>H0617: 1 and L0769: 1.   |  |  |  |
| HKDBF43 | 1034471 | 648 | 3 - 431   | 2823 | Pro-2 to Asp-14,<br>Ser-71 to Thr-76,<br>Ser-110 to Trp-119. |  | AR089: 31, AR053:<br>27, AR096: 26, AR052:<br>25, AR039: 16, AR060:   |  |  |  |



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|---------|---------|-----|----------------|------|--|--|--|--|--|
| HVVCT43 | 1034539 | 649 | 3152 -<br>2838 | 2824 |  |  | 15, AR033: 13, AR104:<br>13, AR055: 6, AR061:<br>4<br>L0749: 4, L0471: 3,<br>L0748: 3, L0777: 3,<br>H0545: 2, H0561: 2,<br>L0770: 2, L0769: 2,<br>L0745: 2, L0779: 2,<br>L0752: 2, L0759: 2,<br>H0657: 1, H0663: 1,<br>H0125: 1, S0358: 1,<br>H0393: 1, H0411: 1,<br>L0586: 1, H0013: 1,<br>H0156: 1, H0083: 1,<br>H0356: 1, H0328: 1,<br>H0321: 1, H0551: 1,<br>S0422: 1, L0764: 1,<br>L0773: 1, L0804: 1,<br>L0774: 1, L0776: 1,<br>L0659: 1, H0547: 1,<br>H0519: 1, H0683: 1,<br>H0659: 1, H0648: 1,<br>H0672: 1, S0330: 1,<br>S3014: 1, L0731: 1,<br>S0031: 1 and H0352: 1.<br>L0666: 47, H0046: 20,<br>H0672: 13, L0754: 11,<br>S0003: 9, L0766: 6,<br>L0664: 6, L0744: 5,<br>L0439: 5, L0777: 5, |  |  |
|---------|---------|-----|----------------|------|--|--|--|--|--|



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|--|--|--|--|--|--|
| L0663: 4, H0658: 4,<br>L0599: 4, S0214: 3,<br>L0637: 3, L0521: 3,<br>L0804: 3, L0438: 3,<br>H0435: 3, L0752: 3,<br>S0408: 2, S0046: 2,<br>H0497: 2, H0590: 2,<br>H0050: 2, H0644: 2,<br>H0264: 2, T0041: 2,<br>S0002: 2, S0426: 2,<br>L0770: 2, L0794: 2,<br>L0775: 2, L0665: 2,<br>H0547: 2, S0126: 2,<br>H0659: 2, S0152: 2,<br>H0478: 2, L0786: 2,<br>L0779: 2, L0731: 2,<br>L0759: 2, L0608: 2,<br>H0423: 2, H0624: 1,<br>H0556: 1, H0686: 1,<br>S0342: 1, S0114: 1,<br>S0132: 1, H0645: 1,<br>S0222: 1, H0601: 1,<br>H0270: 1, T0114: 1,<br>H0013: 1, L0021: 1,<br>H0599: 1, H0575: 1,<br>H0318: 1, L0738: 1,<br>H0327: 1, H0014: 1,<br>H0373: 1, S0051: 1,<br>H0021: 1, H0316: 1,<br>H0040: 1, H0616: 1, |  |  |  |  |  |
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|         |         |     |            |      |                   |  |  |  |
|---------|---------|-----|------------|------|-------------------|--|--|--|
| HTTDR30 | 1035435 | 650 | 609 - 1022 | 2825 | Val-39 to Ala-45. | H0100: 1, H0625: 1,<br>H0561: 1, S0440: 1,<br>H0641: 1, S0144: 1,<br>S0142: 1, L0598: 1,<br>H0529: 1, L0369: 1,<br>L0769: 1, L0646: 1,<br>L0771: 1, L0662: 1,<br>L0803: 1, L0774: 1,<br>L0651: 1, L0805: 1,<br>L0776: 1, L0659: 1,<br>L0783: 1, L0791: 1,<br>L0792: 1, H0519: 1,<br>H0684: 1, H0670: 1,<br>H0660: 1, H0648: 1,<br>S0328: 1, H0518: 1,<br>H0521: 1, H0522: 1,<br>H0696: 1, H0555: 1,<br>H0436: 1, L0758: 1,<br>H0445: 1, L0684: 1,<br>H0595: 1, L0588: 1,<br>S0026: 1, H0543: 1,<br>H0422: 1 and H0506: 1.<br>AR055: 8, AR060: 6,<br>AR052: 6, AR089: 5,<br>AR096: 5, AR053: 5,<br>AR033: 4, AR061: 3,<br>AR104: 2, AR039: 2<br>L0766: 7, H0591: 3,<br>H0040: 3, L0794: 3,<br>H0689: 3, L0752: 3. |  |  |
|---------|---------|-----|------------|------|-------------------|--|--|--|



|         |         |     |            |      |   |  |  |  |  |
|---------|---------|-----|------------|------|---|--|--|--|--|
|         |         |     |            |      |   |  | H0581: 2, H0059: 2,<br>L0771: 2, L0809: 2,<br>L0665: 2, L0749: 2,<br>H0637: 1, H0497: 1,<br>T0109: 1, H0036: 1,<br>H0318: 1, H0039: 1,<br>H0181: 1, H0038: 1,<br>H0634: 1, L0637: 1,<br>L0662: 1, L0649: 1,<br>L0388: 1, L0776: 1,<br>L0655: 1, L0658: 1,<br>L0788: 1, H0520: 1,<br>H0690: 1, H0670: 1,<br>H0672: 1, L0751: 1,<br>L0747: 1, L0750: 1,<br>L0777: 1, L0758: 1 and<br>L0361: 1. |  |  |
| HODGO46 | 1035602 | 651 | 420 - 316  | 2826 | Thr-11 to Asn-18,<br>Gly-25 to Glu-30.                          | H0615: 2   |  |  |  |
| HNTTB23 | 1035988 | 652 | 3 - 974    | 2827 | Pro-21 to Asn-31,<br>Arg-158 to Lys-170,<br>Thr-194 to Leu-200. | AR039: 2, AR096: 1,<br>AR089: 1, AR060: 1,<br>AR033: 1, AR061: 1,<br>AR055: 0, AR053: 0<br>L0757: 3, L0594: 2,<br>S0212: 1, L0527: 1,<br>H0547: 1, S0328: 1 and<br>L0756: 1. |  |  |  |
| HVVBV73 | 1036583 | 653 | 334 - 1299 | 2828 | His-55 to Arg-63,<br>Glu-96 to Val-109,<br>Ser-113 to Ala-119,  | S0278: 5, H0580: 2,<br>H0575: 2, H0050: 2,<br>S0344: 2, L0764: 2,  |  |  |  |



|         |         |     |          |      |  |   |   |                        |  |  |
|---------|---------|-----|----------|------|--|---|---|------------------------|--|--|
|         |         |     |          |      |  | Lys-140 to Tyr-150,<br>Glu-157 to Ser-172,<br>Gly-174 to Asn-185,<br>Arg-223 to Pro-245,<br>Leu-264 to Asp-272. | H0672: 2, T0002: 1,<br>S0134: 1, H0656: 1,<br>S0116: 1, H0706: 1,<br>S0010: 1, H0581: 1,<br>H0375: 1, H0030: 1,<br>H0031: 1, H0644: 1,<br>H0090: 1, H0087: 1,<br>T0041: 1, S0142: 1,<br>S0002: 1, S0426: 1,<br>L0770: 1, L0667: 1,<br>L0794: 1, L0803: 1,<br>L0543: 1, H0521: 1,<br>L0748: 1, L0749: 1,<br>S0260: 1 and H0542: 1.                     |                        |  |  |
| HE8MH38 | 1036707 | 654 | 1 - 1812 | 2829 |  |   |   | H0013: 2 and S0126: 1. |  |  |
| HTEPV42 | 1036973 | 655 | 1 - 435  | 2830 | Gln-1 to Asp-6,<br>Gly-11 to Ser-16,<br>Pro-21 to Leu-41,<br>Ser-44 to Pro-54. |   | L0754: 6, L0758: 6,<br>L0598: 3, L0756: 3,<br>H0716: 2, S0358: 2,<br>S0360: 2, S0007: 2,<br>H0318: 2, H0052: 2,<br>L0471: 2, H0615: 2,<br>L0794: 2, L0766: 2,<br>L0663: 2, H0658: 2,<br>L0750: 2, L0731: 2,<br>H0664: 1, H0638: 1,<br>S0442: 1, H0741: 1,<br>H0734: 1, H0229: 1,<br>H0411: 1, H0415: 1,<br>H0497: 1, H0574: 1,<br>H0599: 1, H0108: 1, |                        |  |  |



|         |         |     |          |      |   |   |  |  |
|---------|---------|-----|----------|------|---|---|--|--|
| HFTCG52 | 1037108 | 656 | 706 - 89 | 2831 | Val-10 to Lys-17,<br>Val-137 to Gly-142,<br>Pro-148 to Tyr-167. | S0010: 1, S0474: 1,<br>H0581: 1, H0050: 1,<br>S0214: 1, H0030: 1,<br>H0032: 1, H0113: 1,<br>H0616: 1, T0067: 1,<br>H0488: 1, H0059: 1,<br>S0438: 1, H0538: 1,<br>L0803: 1, L0805: 1,<br>L0776: 1, L0655: 1,<br>L0659: 1, L0809: 1,<br>L5623: 1, L0788: 1,<br>L0791: 1, L0793: 1,<br>L0666: 1, H0520: 1,<br>H0519: 1, H0684: 1,<br>H0670: 1, H0521: 1,<br>L0747: 1, L0749: 1,<br>L0752: 1, L0759: 1,<br>S0434: 1, L0596: 1,<br>L0592: 1, L0362: 1 and<br>H0423: 1. |  |  |
|         |         |     |          |      | Val-10 to Lys-17,<br>Val-137 to Gly-142,<br>Pro-148 to Tyr-167. | AR061: 28, AR033:<br>25, AR104: 22, AR055:<br>22, AR060: 19, AR089:<br>19, AR052: 12, AR039:<br>11, AR096: 11, AR053:<br>8<br>L0751: 7, L0769: 6,<br>L0750: 5, L0752: 5,<br>H0052: 4, L0771: 4,<br>L0775: 4, L0758: 4,  |  |  |



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|--|--|--|--|--|--|--|--|
|  |  |  |  | H0556: 3, L0665: 3,<br>H0486: 2, S0010: 2,<br>H0620: 2, T0006: 2,<br>H0181: 2, H0494: 2,<br>L0774: 2, L0375: 2,<br>L0776: 2, L0512: 2,<br>L0659: 2, H0555: 2,<br>S0206: 2, L0740: 2,<br>L0747: 2, L0596: 2,<br>L0588: 2, S0276: 2,<br>H0624: 1, S0402: 1,<br>T0049: 1, H0341: 1,<br>H0662: 1, S0358: 1,<br>S0376: 1, S0360: 1,<br>S0045: 1, S0476: 1,<br>L0717: 1, H0351: 1,<br>S0222: 1, H0455: 1,<br>T0114: 1, L0021: 1,<br>H0618: 1, T0048: 1,<br>H0318: 1, L0109: 1,<br>H0309: 1, H0544: 1,<br>H0546: 1, H0545: 1,<br>H0009: 1, H0123: 1,<br>L0471: 1, H0424: 1,<br>H0031: 1, H0628: 1,<br>H0617: 1, H0063: 1,<br>H0059: 1, H0100: 1,<br>H0625: 1, H0633: 1,<br>H0646: 1, H0517: 1,<br>L0770: 1, L0764: 1, |  |  |  |
|--|--|--|--|--|--|--|--|



|         |         |     |         |      |  |  |  |  |
|---------|---------|-----|---------|------|--|--|--|--|
| HKA0B40 | 1037131 | 657 | 1 - 360 | 2832 | Asp-64 to Phe-69,<br>Thr-104 to Phe-120. | L0766: 1, L0655: 1,<br>L0657: 1, L0526: 1,<br>L0783: 1, L0809: 1,<br>L0544: 1, L0529: 1,<br>L0664: 1, S0428: 1,<br>H0593: 1, S0126: 1,<br>H0682: 1, H0659: 1,<br>H0670: 1, H0648: 1,<br>L0611: 1, S0432: 1,<br>L0756: 1, L0757: 1,<br>S0436: 1 and S0194: 1.   |  |  |
|         |         |     |         |      |  | AR052: 26, AR033:<br>22, AR104: 15, AR053:<br>14, AR060: 12, AR055:<br>12, AR089: 11, AR096:<br>8, AR061: 4, AR039:<br>2<br>H0360: 14, S0408: 5,<br>L0774: 5, L0749: 5,<br>L0775: 4, H0648: 4,<br>L0623: 3, H0373: 3,<br>L0520: 3, S0328: 3,<br>S0406: 3, S0360: 2,<br>S0222: 2, H0575: 2,<br>T0082: 2, L0471: 2,<br>H0494: 2, L0763: 2,<br>L0769: 2, L0764: 2,<br>L0517: 2, L0809: 2,<br>H0684: 2, L0747: 2,<br>S0031: 2, L0581: 2, |  |  |



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|  | H0171: 1, T0002: 1,<br>H0685: 1, T0049: 1,<br>H0657: 1, S0116: 1,<br>L0481: 1, H0638: 1,<br>S0358: 1, S0444: 1,<br>S0410: 1, H0580: 1,<br>H0722: 1, S0045: 1,<br>S0046: 1, S0132: 1,<br>H0393: 1, T0060: 1,<br>H0156: 1, H0230: 1,<br>H0320: 1, H0014: 1,<br>L0163: 1, S0051: 1,<br>H0615: 1, S0036: 1,<br>H0412: 1, H0202: 1,<br>H0560: 1, S0438: 1,<br>S0440: 1, S0144: 1,<br>L0772: 1, L0521: 1,<br>L0662: 1, L0767: 1,<br>L0768: 1, L5574: 1,<br>L0522: 1, L0659: 1,<br>L0526: 1, L0782: 1,<br>L0788: 1, H0689: 1,<br>H0690: 1, H0658: 1,<br>H0670: 1, H0672: 1,<br>S0378: 1, S0404: 1,<br>S0028: 1, L0779: 1,<br>L0757: 1, L0758: 1,<br>L0759: 1, S0434: 1,<br>L0589: 1, S0192: 1,<br>H0422: 1 and S0424: 1. |  |  |  |  |  |
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|---------|---------|-----|----------|------|--|--|--|--|
| HPDVE37 | 1037303 | 658 | 34 - 885 | 2833 | His-8 to Gly-18,<br>Phe-25 to Ala-39,<br>Val-70 to Ser-75,<br>Gln-114 to Gly-121,<br>Thr-146 to Lys-155,<br>Gly-213 to Asn-219,<br>Glu-256 to Asp-267. | H0521: 68, H0090: 12,<br>L0666: 10, L0748: 10,<br>L0775: 9, H0522: 9,<br>H0638: 8, L0771: 8,<br>L0659: 8, H0591: 7,<br>L0747: 7, L0770: 5,<br>L0664: 5, L0754: 5,<br>H0580: 4, H0486: 4,<br>H0622: 4, H0644: 4,<br>H0551: 4, H0494: 4,<br>L0655: 4, S0374: 4,<br>L0755: 4, L0759: 4,<br>S0132: 3, H0013: 3,<br>H0421: 3, H0553: 3,<br>H0616: 3, H0641: 3,<br>S0142: 3, L0766: 3,<br>L0663: 3, L0665: 3,<br>H0547: 3, L0756: 3,<br>L0779: 3, L0752: 3,<br>S0358: 2, S0376: 2,<br>S0444: 2, S0360: 2,<br>S0278: 2, H0431: 2,<br>H0586: 2, H0575: 2,<br>H0318: 2, H0581: 2,<br>H0457: 2, S0003: 2,<br>H0688: 2, H0039: 2,<br>H0264: 2, H0529: 2,<br>L0763: 2, L0769: 2,<br>L0646: 2, L0803: 2,<br>L0774: 2, H0701: 2, |  |  |
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|  | S0380: 2, H0555: 2,<br>L0439: 2, L0740: 2,<br>L0777: 2, L0731: 2,<br>H0445: 2, L0599: 2,<br>L0608: 2, H0506: 2,<br>S0040: 1, H0650: 1,<br>S0116: 1, S0212: 1,<br>S0356: 1, S0354: 1,<br>S0468: 1, S0045: 1,<br>H0619: 1, S6022: 1,<br>H0370: 1, H0392: 1,<br>H0497: 1, H0642: 1,<br>T0114: 1, H0427: 1,<br>H0042: 1, H0251: 1,<br>H0596: 1, H0046: 1,<br>H0086: 1, H0057: 1,<br>H0083: 1, H0375: 1,<br>T0023: 1, H0031: 1,<br>L0055: 1, H0598: 1,<br>H0135: 1, H0038: 1,<br>H0040: 1, H0412: 1,<br>H0056: 1, T0042: 1,<br>S0370: 1, H0509: 1,<br>S0144: 1, S0002: 1,<br>S0426: 1, L0796: 1,<br>L0772: 1, L0764: 1,<br>L0765: 1, L0662: 1,<br>L0768: 1, L0389: 1,<br>L0804: 1, L0651: 1,<br>L0636: 1, L0647: 1. |
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|---------|---------|-----|----------|------|--|--|--|---|--|--|--|
|         |         |     |          |      |  |  |  | L0791: 1, H0702: 1,<br>H0693: 1, H0593: 1,<br>S0122: 1, H0689: 1,<br>H0659: 1, H0658: 1,<br>S0328: 1, H0539: 1,<br>S0152: 1, H0479: 1,<br>S0312: 1, S0027: 1,<br>S0206: 1, L0744: 1,<br>L0749: 1, L0757: 1,<br>S0031: 1, H0707: 1,<br>L0597: 1, L0605: 1,<br>H0667: 1, S0242: 1,<br>H0543: 1, H0423: 1,<br>H0677: 1 and H0352: 1. |  |  |  |
| HTLES74 | 1037438 | 659 | 95 - 859 | 2834 |  |  |  | H0618: 3, L0740: 2,<br>L0749: 2, L0596: 2,<br>L0597: 2, S0354: 1,<br>H0580: 1, H0042: 1,<br>H0253: 1, S0010: 1,<br>H0172: 1, H0615: 1,<br>H0412: 1, S0386: 1,<br>L0648: 1, L0662: 1,<br>L0768: 1, L0803: 1,<br>L0774: 1, L0657: 1,<br>L0809: 1, L0779: 1,<br>L0758: 1 and H0445: 1.   |  |  |  |
| HCORG51 | 1037480 | 660 | 3 - 434  | 2835 | Cys-1 to Glu-6,<br>Asp-52 to Asp-65,<br>Lys-82 to Pro-88,<br>Phe-111 to Ala-123. |  |  | S0136: 33, L0747: 16,<br>H0144: 14, L0731: 14,<br>L0752: 13, S0422: 12,<br>L0740: 12, L0754: 11,  |  |  |  |



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|  |  | S0476: 3, S0278: 3,<br>S0222: 3, H0486: 3,<br>H0687: 3, H0674: 3,<br>S0448: 3, L0646: 3,<br>L0662: 3, L0649: 3,<br>L0774: 3, L0657: 3,<br>S0374: 3, H0547: 3,<br>S0328: 3, S3014: 3,<br>H0444: 3, H0171: 2,<br>H0265: 2, T0002: 2,<br>S0040: 2, H0716: 2,<br>H0295: 2, T0049: 2,<br>S0218: 2, H0656: 2,<br>S0116: 2, H0638: 2,<br>S0418: 2, S0420: 2,<br>S0358: 2, S0045: 2,<br>H0369: 2, H0431: 2,<br>H0415: 2, H0592: 2,<br>H0586: 2, H0574: 2,<br>T0109: 2, H0250: 2,<br>S0280: 2, S0010: 2,<br>H0052: 2, H0050: 2,<br>H0012: 2, H0051: 2,<br>S0051: 2, H0266: 2,<br>H0288: 2, S0214: 2,<br>H0252: 2, H0428: 2,<br>H0039: 2, H0673: 2,<br>H0135: 2, H0063: 2,<br>H0412: 2, H0623: 2,<br>S0150: 2, H0207: 2, |  |  |  |  |
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|  | H0641: 2, S0142: 2,<br>S0344: 2, L0770: 2,<br>L0771: 2, L0766: 2,<br>L0558: 2, L0519: 2,<br>H0520: 2, H0684: 2,<br>H0435: 2, H0710: 2,<br>H0696: 2, H0704: 2,<br>H0134: 2, H0436: 2,<br>S0028: 2, L0756: 2,<br>L0753: 2, H0445: 2,<br>S0434: 2, L0588: 2,<br>H0422: 2, S0470: 1,<br>H0686: 1, H0685: 1,<br>S0342: 1, H0294: 1,<br>S0114: 1, S0134: 1,<br>H0583: 1, H0484: 1,<br>H0663: 1, H0241: 1,<br>H0176: 1, S0356: 1,<br>T0008: 1, H0637: 1,<br>H0152: 1, S0046: 1,<br>H0619: 1, H0645: 1,<br>H0411: 1, H0438: 1,<br>H0600: 1, H0497: 1,<br>H0642: 1, H0331: 1,<br>T0039: 1, H0635: 1,<br>H0427: 1, H0156: 1,<br>H0097: 1, H0575: 1,<br>H0706: 1, H0390: 1,<br>H0581: 1, H0421: 1,<br>H0434: 1, H0196: 1, |  |
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| H0309: 1, H0596: 1,<br>L0040: 1, H0597: 1,<br>H0327: 1, H0530: 1,<br>H0544: 1, H0545: 1,<br>H0046: 1, N0006: 1,<br>H0570: 1, H0569: 1,<br>H0172: 1, H0123: 1,<br>H0010: 1, H0373: 1,<br>H0083: 1, H0510: 1,<br>H0099: 1, H0267: 1,<br>H0290: 1, H0328: 1,<br>H0535: 1, H0622: 1,<br>L0483: 1, T0006: 1,<br>H0316: 1, H0591: 1,<br>H0040: 1, H0634: 1,<br>H0413: 1, H0100: 1,<br>T0041: 1, H0334: 1,<br>H0560: 1, H0625: 1,<br>S0438: 1, H0647: 1,<br>S0144: 1, H0538: 1,<br>UNKWN: 1, L0369: 1,<br>L0762: 1, L0637: 1,<br>L0761: 1, L0373: 1,<br>L0764: 1, L0773: 1,<br>L0648: 1, L0626: 1,<br>L0767: 1, L0794: 1,<br>L0386: 1, L0378: 1,<br>L0805: 1, L0629: 1,<br>L0383: 1, L0382: 1,<br>L0809: 1, L0530: 1, |
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|---------|---------|-----|---------|------|------------------|---|---------|---|
| HPAMM72 | 1038344 | 661 | 2 - 520 | 2836 | Gly-1 to Thr-11. | L0789: 1, L0663: 1,<br>S0428: 1, H0701: 1,<br>L0565: 1, H0519: 1,<br>H0593: 1, H0689: 1,<br>H0658: 1, H0672: 1,<br>S0330: 1, H0539: 1,<br>S0378: 1, S0380: 1,<br>H0709: 1, S0152: 1,<br>S0332: 1, S0044: 1,<br>S0188: 1, H0187: 1,<br>L0356: 1, H0478: 1,<br>H0627: 1, H0631: 1,<br>L0611: 1, S0206: 1,<br>S0032: 1, L0439: 1,<br>L0786: 1, H0343: 1,<br>L0592: 1, L0485: 1,<br>H0668: 1, H0136: 1,<br>S0194: 1, S0196: 1,<br>S0460: 1, H0506: 1 and<br>H0008: 1. | 16p13.3 | 141750,<br>141800,<br>141800,<br>141800,<br>141800,<br>141850,<br>141850,<br>141850,<br>141850,<br>141850,<br>141850, |
|         |         |     |         |      |                  | L0747: 5, H0424: 4,<br>H0617: 4, L0769: 3,<br>L0526: 3, S3014: 3,<br>L0748: 3, L0750: 3,<br>H0661: 2, H0663: 2,<br>H0392: 2, H0156: 2,<br>H0123: 2, H0033: 2,<br>H0213: 2, H0059: 2,<br>L0763: 2, L0542: 2,<br>H0519: 2, L0751: 2,  |         |   |



|         |         |     |           |      |  |   |  |
|---------|---------|-----|-----------|------|--|---|--|
| HKZAT03 | 1038378 | 662 | 21 - 1559 | 2837 | Thr-1 to Gly-8,<br>Phe-49 to Leu-67,<br>Gln-142 to Gly-150,<br>Pro-274 to Leu-282. | L0779: 2, L0731: 2,<br>L0757: 2, L0605: 2,<br>L0615: 1, S0342: 1,<br>H0580: 1, S0278: 1,<br>H0550: 1, S0280: 1,<br>L0021: 1, T0048: 1,<br>H0052: 1, H0544: 1,<br>H0545: 1, L0471: 1,<br>H0012: 1, H0620: 1,<br>H0014: 1, N0007: 1,<br>S0051: 1, H0083: 1,<br>H0284: 1, S0250: 1,<br>H0688: 1, H0708: 1,<br>H0080: 1, H0494: 1,<br>H0509: 1, L0770: 1,<br>L0764: 1, L0771: 1,<br>L0376: 1, L0782: 1,<br>L0809: 1, L0545: 1,<br>L0666: 1, H0682: 1,<br>H0659: 1, H0658: 1,<br>H0672: 1, H0696: 1,<br>S0044: 1, H0214: 1,<br>L0743: 1, L0740: 1,<br>L0754: 1, L0777: 1,<br>S0260: 1, S0276: 1 and<br>S0196: 1. | 156850,<br>186580,<br>191092,<br>600140,<br>600273,<br>601313,<br>601785 |
|         |         |     |           |      |  | H0617: 14, H0521: 11, 22q13.33<br>L0794: 4, H0542: 4,<br>H0638: 3, S0360: 3,<br>L0648: 3, L0659: 3,   |  |



|         |         |     |           |      |  |  |                   |                    |  |
|---------|---------|-----|-----------|------|--|--|-------------------|--------------------|--|
|         |         |     |           |      | Pro-396 to Leu-402, L0665: 3, S0328: 3, Arg-405 to Glu-410, H0518: 3, H0423: 3, Gly-436 to Ala-442, S0358: 2, H0622: 2, Arg-470 to Pro-476, H0641: 2, L0763: 2, Pro-481 to Leu-486, L0663: 2, L0664: 2, H0689: 2, H0522: 2, H0555: 2, H0422: 2, H0624: 1, H0585: 1, H0657: 1, H0671: 1, H0402: 1, S0376: 1, H0580: 1, S0278: 1, H0549: 1, H0602: 1, H0586: 1, H0069: 1, H0635: 1, H0581: 1, H0546: 1, H0510: 1, H0179: 1, H0271: 1, H0644: 1, H0606: 1, H0090: 1, H0634: 1, H0551: 1, H0488: 1, H0509: 1, L0640: 1, L0800: 1, L0662: 1, L0804: 1, L0607: 1, L0657: 1, L0809: 1, L0790: 1, L0666: 1, H0593: 1, H0684: 1, H0672: 1, H0710: 1, S0434: 1, S0436: 1 and S0196: 1. |  |                   |                    |  |
| HDQMA85 | 1038717 | 663 | 228 - 356 | 2838 |  |  | 12p12.3-<br>p12.1 | 103950,<br>112410, |  |



|         |         |     |         |      |   |  |                   |   |
|---------|---------|-----|---------|------|---|--|-------------------|---|
|         |         |     |         |      |   |  |                   | 150100,<br>168470,<br>190070,<br>190070,<br>200990,<br>602096                       |
| HVCCQ82 | 1038718 | 664 | 3 - 578 | 2839 | Ala-14 to Asp-19,<br>Lys-92 to Arg-110. | L0748: 34, L0777: 15,<br>S0438: 11, S0192: 11,<br>L0608: 7, H0331: 6,<br>H0574: 6, L0771: 6,<br>S0027: 6, L0756: 6,<br>H0632: 5, L0731: 5,<br>S0360: 4, H0427: 4,<br>L0662: 4, L0744: 4,<br>L0779: 4, L0757: 4,<br>S0242: 4, S0354: 3,<br>S0408: 3, H0494: 3,<br>H0509: 3, L0770: 3,<br>L0775: 3, L0809: 3,<br>L0666: 3, H0519: 3,<br>H0648: 3, S3014: 3,<br>S0028: 3, L0750: 3,<br>H0661: 2, S0442: 2,<br>S0358: 2, S0376: 2,<br>S0444: 2, H0013: 2,<br>S0280: 2, H0309: 2,<br>H0545: 2, H0510: 2,<br>H0032: 2, H0551: 2,<br>S0142: 2, S0422: 2,<br>L0774: 2, L0806: 2, | 12p12.3-<br>p12.1 | 103950,<br>112410,<br>150100,<br>168470,<br>190070,<br>190070,<br>200990,<br>602096 |



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| L0776: 2, L0518: 2,<br>L0532: 2, S0374: 2,<br>H0547: 2, H0435: 2,<br>H0696: 2, S0206: 2,<br>S0032: 2, L0755: 2,<br>L0758: 2, H0668: 2,<br>S0194: 2, H0170: 1,<br>H0685: 1, S0116: 1,<br>H0638: 1, H0339: 1,<br>S0045: 1, S0278: 1,<br>S6022: 1, H0586: 1,<br>H0497: 1, H0486: 1,<br>L0021: 1, H0003: 1,<br>H0147: 1, H0421: 1,<br>H0546: 1, S0050: 1,<br>H0014: 1, H0015: 1,<br>S0051: 1, H0355: 1,<br>H0375: 1, H0031: 1,<br>H0628: 1, H0038: 1,<br>S0014: 1, S0466: 1,<br>S0440: 1, H0633: 1,<br>H0646: 1, S0344: 1,<br>S0210: 1, S0002: 1,<br>L0371: 1, L0638: 1,<br>L0772: 1, L0373: 1,<br>L0764: 1, L0522: 1,<br>L0803: 1, L0526: 1,<br>L0545: 1, L0787: 1,<br>L0790: 1, L0663: 1,<br>H0520: 1, H0593: 1, |
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|---------|---------|-----|----------|------|--|--|--|--|--|--|
|         |         |     |          |      |  |  | S0126: 1, H0682: 1,<br>H0660: 1, H0666: 1,<br>S0152: 1, S0406: 1,<br>S0392: 1, H0345: 1,<br>L0742: 1, L0439: 1,<br>L0740: 1, L0753: 1,<br>H0444: 1, H0653: 1 and<br>S0196: 1.  |  |  |  |
| HTGFP54 | 1038915 | 665 | 22 - 528 | 2840 |  |  | H0435: 2, S0218: 1 and<br>H0415: 1.  |  |  |  |
| HBODF41 | 1039017 | 666 | 1 - 2418 | 2841 |  |  | L0747: 26, L0740: 20,<br>L0748: 18, L0752: 14,<br>L0745: 13, L0599: 11,<br>L0659: 8, H0509: 7,<br>L0756: 7, L0777: 7,<br>S0222: 6, S0010: 6,<br>L0764: 6, L0776: 6,<br>L0666: 6, L0754: 6,<br>L0746: 6, H0013: 5,<br>S0346: 5, H0050: 5,<br>L0750: 5, L0758: 5,<br>S0360: 4, H0574: 4,<br>H0632: 4, S0280: 4,<br>L0471: 4, H0039: 4,<br>H0622: 4, L0766: 4,<br>L0774: 4, L0783: 4,<br>H0445: 4, L0366: 4,<br>H0586: 3, H0251: 3,<br>H0014: 3, T0010: 3,<br>H0644: 3, L0769: 3, |  |  |  |



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|  |  | S0408: 1, S0410: 1,<br>H0229: 1, H0208: 1,<br>S0045: 1, S0046: 1,<br>H0619: 1, H0645: 1,<br>H0411: 1, H0261: 1,<br>S6016: 1, H0431: 1,<br>H0438: 1, H0587: 1,<br>H0643: 1, H0331: 1,<br>H0599: 1, S0049: 1,<br>H0596: 1, H0545: 1,<br>H0123: 1, H0057: 1,<br>H0373: 1, S0051: 1,<br>H0083: 1, H0355: 1,<br>H0687: 1, H0048: 1,<br>H0212: 1, S0364: 1,<br>H0361: 1, H0090: 1,<br>H0038: 1, H0087: 1,<br>L0060: 1, H0551: 1,<br>H0264: 1, S0386: 1,<br>H0100: 1, L0370: 1,<br>T0042: 1, S0352: 1,<br>S0440: 1, H0646: 1,<br>S0210: 1, S0422: 1,<br>L0770: 1, L0800: 1,<br>L0771: 1, L0773: 1,<br>L0648: 1, L0768: 1,<br>L0522: 1, L0632: 1,<br>L0805: 1, L0607: 1,<br>L0512: 1, L0791: 1,<br>L0792: 1, S0053: 1, |  |  |  |  |  |  |
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|---------|---------|-----|----------|------|--|--|--|--|
| HR0DW53 | 1039068 | 667 | 45 - 494 | 2842 | Arg-115 to Gln-127,<br>Leu-137 to Val-150. | S0374: 1, H0593: 1,<br>H0659: 1, S0152: 1,<br>H0696: 1, H0704: 1,<br>H0436: 1, L0609: 1,<br>S0390: 1, S0037: 1,<br>S0027: 1, L0741: 1,<br>L0755: 1, H0444: 1,<br>L0485: 1, L0581: 1,<br>H0667: 1, L0096: 1 and<br>S0194: 1.  |  |  |
|         |         |     |          |      |  | L0748: 14, L0766: 11,<br>L0777: 5, L0794: 4,<br>L0803: 4, L0776: 3,<br>L0747: 3, L0749: 3,<br>L0791: 2, L0438: 2,<br>H0435: 2, L0779: 2,<br>L0780: 2, S0192: 2,<br>L0442: 1, S6024: 1,<br>S0134: 1, H0583: 1,<br>S0222: 1, H0421: 1,<br>H0235: 1, H0620: 1,<br>H0598: 1, H0059: 1,<br>T0041: 1, S0426: 1,<br>L0764: 1, L0662: 1,<br>L0774: 1, L0805: 1,<br>L0659: 1, L0809: 1,<br>L0790: 1, L0792: 1,<br>L0666: 1, L0664: 1,<br>H0659: 1, H0670: 1,<br>H0648: 1, L0740: 1, |  |  |



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|---------|---------|-----|-----------|------|--|--|-------|--|
| HPAMC60 | 1039290 | 668 | 1 - 1242  | 2843 | Pro-7 to Pro-17,<br>Leu-20 to Gly-26,<br>Leu-48 to Val-54,<br>Pro-65 to Asn-70,<br>Glu-90 to Ala-95,<br>Ala-102 to Gln-116,<br>Glu-122 to Leu-137,<br>Val-183 to Leu-192,<br>Ala-235 to Ile-256,<br>Gly-264 to Asp-270,<br>Phe-282 to Ile-288,<br>Arg-309 to Ala-314,<br>Asn-330 to Asp-336,<br>Ala-338 to Asp-344,<br>Lys-358 to Lys-367. | L0750: 1, L0758: 1,<br>S0106: 1 and S0446: 1.<br>H0682: 1  | 15q22 | 102578,<br>109700,<br>151670,<br>154550,<br>601780 |
| HLMHM83 | 1039491 | 669 | 155 - 745 | 2844 | Val-43 to Tyr-48,<br>Pro-50 to Ser-57,<br>Thr-75 to Gly-83,<br>Tyr-95 to Asn-105,<br>Tyr-155 to Trp-163.   | H0617: 7, L0771: 6,<br>S0408: 4, S0358: 3,<br>H0638: 2, L0761: 2,<br>L0764: 2, L0655: 2,<br>L0634: 2, L0666: 2,<br>H0435: 2, L0751: 2,<br>L0777: 2, H0506: 2,<br>H0650: 1, H0254: 1,<br>H0255: 1, S0444: 1,<br>H0351: 1, H0549: 1,<br>H0600: 1, H0592: 1,<br>L0022: 1, H0744: 1, |       |  |



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|---------|---------|-----|-----------|------|--|--|--|--|--|
| HOUDK70 | 1039538 | 670 | 84 - 1142 | 2845 | Phe-27 to Gly-32,<br>Tyr-45 to Glu-57,<br>Gly-80 to Asn-89,<br>Ser-182 to Pro-187,<br>Asp-270 to Ser-278,<br>Tyr-288 to Trp-293. | L0748: 13, L0731: 8,<br>H0046: 7, L0740: 7,<br>L0758: 7, L0766: 6,<br>L0665: 5, L0747: 5,<br>L0749: 5, H0135: 4,<br>L0769: 4, L0776: 4,<br>L0659: 4, L0438: 4,<br>L0752: 4, L0757: 4,<br>S0436: 4, H0265: 3,<br>S0222: 3, S0474: 3,<br>H0424: 3, H0040: 3,<br>L0662: 3, L0783: 3,<br>H0672: 3, H0521: 3,<br>L0439: 3, L0750: 3,<br>H0556: 2, H0717: 2,<br>L0415: 2, S0360: 2,<br>H0486: 2, H0575: 2,<br>H0581: 2, H0251: 2,<br>L0738: 2, L0483: 2,<br>H0494: 2, S0440: 2,<br>L0761: 2, L0794: 2, | H0204: 1, H0231: 1,<br>S0440: 1, L0800: 1,<br>L0643: 1, L0648: 1,<br>L0662: 1, L0776: 1,<br>L0664: 1, S0216: 1,<br>H0690: 1, H0672: 1,<br>S0378: 1, S0406: 1,<br>H0555: 1, L0747: 1 and<br>S0436: 1. |  |  |
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| L0652: 2, L0654: 2,<br>L0666: 2, H0659: 2,<br>L0754: 2, L0485: 2,<br>L0608: 2, L0601: 2,<br>S0026: 2, H0423: 2,<br>H0686: 1, S0040: 1,<br>H0657: 1, S0212: 1,<br>H0662: 1, S0420: 1,<br>S0442: 1, S0358: 1,<br>S0444: 1, T0008: 1,<br>H0728: 1, S0045: 1,<br>S0476: 1, S6026: 1,<br>L0717: 1, H0550: 1,<br>H0392: 1, H0333: 1,<br>H0632: 1, T0040: 1,<br>H0250: 1, H0156: 1,<br>H0599: 1, H0706: 1,<br>H0421: 1, H0597: 1,<br>H0009: 1, L0471: 1,<br>H0620: 1, H0015: 1,<br>H0051: 1, S0051: 1,<br>H0083: 1, S0250: 1,<br>H0428: 1, T0006: 1,<br>H0553: 1, H0617: 1,<br>H0673: 1, H0169: 1,<br>H0674: 1, H0068: 1,<br>H0316: 1, H0412: 1,<br>H0413: 1, H0561: 1,<br>H0509: 1, H0641: 1,<br>H0633: 1, H0647: 1, |
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|---------|---------|-----|----------|------|---|---|-----------|--|
| HCYBI10 | 1039579 | 671 | 2 - 1042 | 2846 | Pro-29 to Ile-35,<br>Gly-49 to Thr-90,<br>Pro-113 to Val-123,<br>Glu-129 to Lys-146,<br>Glu-151 to Arg-163,<br>Leu-166 to Arg-179 | S0144: 1, S0422: 1,<br>L0640: 1, L0770: 1,<br>L0772: 1, L0373: 1,<br>L0646: 1, L0645: 1,<br>L0768: 1, L0803: 1,<br>L0774: 1, L0775: 1,<br>L0651: 1, L0655: 1,<br>L0661: 1, L0809: 1,<br>L5622: 1, L0663: 1,<br>H0144: 1, H0724: 1,<br>H0593: 1, H0690: 1,<br>H0684: 1, H0435: 1,<br>H0658: 1, H0670: 1,<br>H0648: 1, S0330: 1,<br>S0406: 1, H0447: 1,<br>S3012: 1, L0743: 1,<br>L0744: 1, L0751: 1,<br>L0777: 1, L0780: 1,<br>L0755: 1, L0759: 1,<br>H0665: 1 and H0543: 1. | 17q23-q24 | 106180,<br>115660,<br>138700,<br>139250,<br>148500,<br>150200,<br>154275,<br>162100,<br>170500,<br>170500, |
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|---------|---------|-----|-----------|------|---|--|--|---|--|---|
|         |         |     |           |      |   |  |  | H0046: 1, H0687: 1,<br>L0369: 1, L0770: 1,<br>L0769: 1, L0772: 1,<br>L0800: 1, L0806: 1,<br>L0518: 1, L0809: 1,<br>L0788: 1, H0144: 1,<br>L0438: 1, H0660: 1,<br>H0666: 1, H0648: 1,<br>L0439: 1, L0747: 1,<br>L0750: 1, L0756: 1,<br>L0752: 1, L0759: 1,<br>S0434: 1 and S0436: 1. |  | 170500,<br>176960,<br>182452,<br>230200,<br>249000,<br>253250 |
| HMEFK29 | 1039652 | 672 | 643 - 999 | 2847 |   |  |  | H0402: 2, H0570: 1,<br>H0266: 1 and H0666: 1.   |  |   |
| HAOSK79 | 1039663 | 673 | 48 - 659  | 2848 | Asp-10 to Gly-17,<br>Asp-38 to Ser-44,<br>Asn-70 to Thr-79,<br>Gly-81 to Ser-91,<br>Lys-94 to Ala-102,<br>Asp-110 to Ile-116,<br>Asp-152 to Leu-157,<br>Pro-172 to Glu-177. |  | L0748: 28, L0758: 13,<br>L0769: 7, L0766: 7,<br>S0026: 7, L0749: 6,<br>H0266: 5, H0616: 4,<br>L0750: 4, L0362: 4,<br>H0341: 3, H0658: 3,<br>L0747: 3, H0686: 2,<br>H0318: 2, H0413: 2,<br>H0494: 2, L0646: 2,<br>H0659: 2, L0751: 2,<br>L0731: 2, L0759: 2,<br>L0588: 2, T0002: 1,<br>H0656: 1, H0484: 1,<br>H0661: 1, L0481: 1,<br>H0125: 1, S0045: 1,<br>H0351: 1, H0013: 1, |   |  |   |



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|---------|---------|-----|----------|------|---|---|-------|---|
| HPDRV42 | 1039689 | 674 | 3 - 1649 | 2849 | Glu-31 to Pro-39,<br>Thr-75 to Glu-80,<br>Ala-131 to Gly-140,<br>Ala-156 to Ala-165,<br>Arg-184 to Phe-189,<br>Asn-221 to Phe-228,<br>Glu-239 to Glu-245,<br>Ser-253 to Asp-261,<br>Thr-267 to Thr-272,<br>Thr-292 to Asp-297,<br>Tyr-313 to Asn-325,<br>Glu-385 to Leu-393 | L0021: 1, L0471: 1,<br>H0267: 1, H0252: 1,<br>H0068: 1, H0038: 1,<br>H0087: 1, H0412: 1,<br>H0366: 1, L0772: 1,<br>L0373: 1, L0775: 1,<br>L0806: 1, L0776: 1,<br>L0655: 1, L0657: 1,<br>S0053: 1, H0144: 1,<br>H0547: 1, H0660: 1,<br>H0648: 1, S0152: 1,<br>H0521: 1, S3014: 1,<br>L0743: 1, L0740: 1,<br>L0756: 1, L0777: 1,<br>L0753: 1, L0757: 1,<br>H0445: 1, L0608: 1,<br>H0653: 1, H0136: 1,<br>S0276: 1 and H0543: 1. | 15q15 | 177070,<br>177070,<br>182500,<br>218000,<br>227220,<br>243500,<br>600839,<br>601800 |
|---------|---------|-----|----------|------|---|---|-------|---|



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| Tyr-400 to Lys-410,<br>Pro-413 to Gly-420,<br>Lys-454 to Leu-463,<br>Pro-501 to Gly-514,<br>Gln-535 to Leu-549. | H0013: 5, H0457: 5,<br>H0553: 5, H0673: 5,<br>H0696: 5, S0406: 5,<br>L0740: 5, L0731: 5,<br>L0596: 5, H0585: 4,<br>H0661: 4, S0418: 4,<br>S0356: 4, S0408: 4,<br>H0575: 4, H0620: 4,<br>H0617: 4, L0764: 4,<br>L0666: 4, L0665: 4,<br>H0519: 4, S3014: 4,<br>S0027: 4, L0752: 4,<br>H0265: 3, H0713: 3,<br>H0657: 3, H0341: 3,<br>H0671: 3, H0638: 3,<br>S0420: 3, S0354: 3,<br>H0619: 3, H0411: 3,<br>H0370: 3, H0586: 3,<br>H0587: 3, H0597: 3,<br>L0471: 3, H0687: 3,<br>S0250: 3, S0003: 3,<br>S0142: 3, H0529: 3,<br>L0662: 3, L0766: 3,<br>L0651: 3, L0659: 3,<br>H0690: 3, S0152: 3,<br>H0436: 3, S0028: 3,<br>L0748: 3, L0750: 3,<br>L0779: 3, L0755: 3,<br>L0757: 3, H0445: 3,<br>S0011: 3, H0423: 3, |
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|--|--|--|--|--|--|
|  | H0686: 2, T0049: 2,<br>S0134: 2, S0116: 2,<br>H0663: 2, H0662: 2,<br>S0444: 2, S0045: 2,<br>S0046: 2, S0132: 2,<br>S0278: 2, H0549: 2,<br>H0550: 2, H0497: 2,<br>H0156: 2, H0599: 2,<br>H0263: 2, H0544: 2,<br>H0012: 2, H0014: 2,<br>S0314: 2, H0428: 2,<br>H0039: 2, H0135: 2,<br>H0087: 2, H0623: 2,<br>H0059: 2, H0100: 2,<br>H0509: 2, S0150: 2,<br>H0641: 2, S0144: 2,<br>S0210: 2, S0002: 2,<br>L0763: 2, L4497: 2,<br>L0768: 2, L0774: 2,<br>L0653: 2, L0654: 2,<br>L0527: 2, L0657: 2,<br>H0144: 2, S0374: 2,<br>H0691: 2, H0520: 2,<br>H0593: 2, H0689: 2,<br>H0435: 2, H0658: 2,<br>S0330: 2, S0378: 2,<br>S0380: 2, L0754: 2,<br>L0756: 2, L0758: 2,<br>L0591: 2, L0485: 2,<br>L0599: 2, S0026: 2, |  |  |  |  |
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|  | H0667: 2, S0192: 2,<br>H0422: 2, H0506: 2,<br>L0600: 2, H0171: 1,<br>T0002: 1, H0717: 1,<br>H0716: 1, H0295: 1,<br>H0650: 1, S0180: 1,<br>H0484: 1, H0483: 1,<br>H0306: 1, S0442: 1,<br>S0376: 1, H0675: 1,<br>S0410: 1, H0489: 1,<br>H0637: 1, S0007: 1,<br>H0645: 1, H0393: 1,<br>L0717: 1, S0222: 1,<br>H0392: 1, H0415: 1,<br>H0601: 1, H0600: 1,<br>H0574: 1, T0039: 1,<br>H0244: 1, H0427: 1,<br>S0280: 1, H0098: 1,<br>H0042: 1, T0082: 1,<br>H0036: 1, S0346: 1,<br>H0705: 1, H0505: 1,<br>H0309: 1, H0545: 1,<br>L0041: 1, H0015: 1,<br>H0373: 1, S0051: 1,<br>H0071: 1, H0510: 1,<br>H0375: 1, S0318: 1,<br>S0022: 1, H0252: 1,<br>H0688: 1, H0644: 1,<br>H0628: 1, L0055: 1,<br>H0032: 1, H0169: 1, |  |  |  |  |
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|         |         |     |                |      |   |   |  |  |  |
|---------|---------|-----|----------------|------|---|---|--|--|--|
| HOPJD35 | 1039703 | 675 | 2590 -<br>1349 | 2850 | Ser-1 to Pro-16,<br>Asn-40 to Gly-46,<br>Pro-48 to Arg-53,<br>Lys-64 to Pro-72,<br>Val-87 to Asp-93,<br>Asp-109 to Tyr-118,<br>Glu-157 to Pro-172,<br>Pro-178 to Gly-188,<br>Glu-252 to Leu-263,<br>Thr-266 to Leu-273,<br>Glu-296 to Ala-310,<br>Glu-312 to Gln-318,<br>Glu-324 to Asn-340,<br>Glu-344 to Gly-373,<br>Glu-383 to Asn-395,<br>Val-399 to Glu-414. | L0662: 7, H0013: 5,<br>L0766: 5, L0803: 4,<br>L0655: 4, L0665: 4,<br>L0740: 4, L0731: 4,<br>H0677: 4, T0042: 3,<br>L0776: 3, L0809: 3,<br>H0519: 3, L0750: 3,<br>L0759: 3, H0543: 3,<br>H0170: 2, L0470: 2,<br>H0341: 2, S0360: 2,<br>H0266: 2, H0551: 2,<br>L0351: 2, H0529: 2,<br>L0646: 2, L0521: 2,<br>L0651: 2, L0659: 2,<br>L0663: 2, L0664: 2,<br>H0547: 2, H0659: 2,<br>L0602: 2, H0518: 2,<br>H0522: 2, S0406: 2,<br>L0748: 2, L0747: 2, | H0627: 1, L0612: 1,<br>S0206: 1, L0743: 1,<br>L0439: 1, L0751: 1,<br>L0753: 1, L0759: 1,<br>S0260: 1, H0444: 1,<br>L0608: 1, L0593: 1,<br>H0668: 1, H0665: 1,<br>S0242: 1, S0194: 1,<br>S0196: 1, S0424: 1,<br>H0008: 1, H0352: 1 and<br>H0712: 1. |  |  |
|---------|---------|-----|----------------|------|---|---|--|--|--|



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| L0591: 2, H0542: 2,<br>H0506: 2, H0171: 1,<br>H0265: 1, T0002: 1,<br>H0713: 1, H0125: 1,<br>S0418: 1, S0358: 1,<br>T0008: 1, H0351: 1,<br>S0222: 1, H0431: 1,<br>H0415: 1, H0586: 1,<br>H0427: 1, S0280: 1,<br>L0021: 1, T0082: 1,<br>S0010: 1, H0581: 1,<br>H0566: 1, L0471: 1,<br>H0620: 1, H0024: 1,<br>H0014: 1, H0687: 1,<br>S0250: 1, H0328: 1,<br>H0428: 1, H0039: 1,<br>H0553: 1, H0090: 1,<br>H0591: 1, H0616: 1,<br>H0379: 1, H0056: 1,<br>T0041: 1, H0494: 1,<br>L0475: 1, S0014: 1,<br>H0560: 1, L0065: 1,<br>S0440: 1, H0509: 1,<br>H0641: 1, S0422: 1,<br>L0369: 1, L0502: 1,<br>L0763: 1, L0770: 1,<br>L0638: 1, L0761: 1,<br>L0373: 1, L0773: 1,<br>L0794: 1, L0381: 1,<br>L0774: 1, L0805: 1, |  |  |  |  |  |
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|         |         |     |           |      |   |  |  |  |  |
|---------|---------|-----|-----------|------|---|--|--|--|--|
|         |         |     |           |      |   | L0527: 1, L0658: 1,<br>L0529: 1, L0789: 1,<br>L0791: 1, L4501: 1,<br>L0666: 1, S0374: 1,<br>L0565: 1, H0723: 1,<br>S0126: 1, H0684: 1,<br>H0435: 1, H0651: 1,<br>S0330: 1, S0378: 1,<br>S0152: 1, H0521: 1,<br>S0044: 1, H0555: 1,<br>H0631: 1, L0749: 1,<br>L0756: 1, L0786: 1,<br>L0755: 1, L0758: 1,<br>S0031: 1, H0445: 1,<br>L0588: 1, L0605: 1,<br>L0608: 1, L0595: 1 and<br>H0653: 1. |  |  |  |
| HTFNP84 | 1039748 | 676 | 70 - 1227 | 2851 | Tyr-11 to Val-16,<br>Glu-37 to Arg-42,<br>Asn-50 to Arg-58,<br>Leu-82 to Leu-96,<br>Glu-112 to Gln-120. | AR096: 1, AR089: 1,<br>AR055: 1, AR053: 1,<br>AR033: 1, AR061: 1,<br>AR060: 0, AR104: 0,<br>AR039: 0, AR052: 0<br>L0766: 16, S0440: 7,<br>L0646: 7, H0547: 6,<br>H0659: 5, L0749: 5,<br>L0759: 5, H0650: 4,<br>S0410: 4, S0422: 4,<br>S0374: 4, H0341: 3,<br>H0032: 3, H0040: 3,<br>H0529: 3, L0804: 3,  |  |  |  |







|         |         |     |            |      |                   |   |   |           |   |  |
|---------|---------|-----|------------|------|-------------------|---|---|-----------|---|--|
|         |         |     |            |      |                   |   | L0764: 1, L0521: 1,<br>L0662: 1, L0774: 1,<br>L0375: 1, L0805: 1,<br>L0776: 1, L0655: 1,<br>L0606: 1, L0659: 1,<br>L0635: 1, L0809: 1,<br>L0367: 1, L0789: 1,<br>L0665: 1, H0519: 1,<br>H0684: 1, H0670: 1,<br>H0666: 1, H0710: 1,<br>H0704: 1, H0134: 1,<br>H0555: 1, L0439: 1,<br>L0750: 1, L0779: 1,<br>L0777: 1, L0752: 1,<br>L0755: 1, L0758: 1,<br>S0436: 1, L0608: 1,<br>L0362: 1, H0667: 1,<br>S0196: 1, H0542: 1,<br>H0543: 1, H0422: 1 and<br>H0352: 1. |           |   |  |
| HTHDT76 | 1039871 | 677 | 1 - 603    | 2852 | Gln-16 to Ser-24. | S0420: 1, H0600: 1,<br>H0587: 1, H0013: 1,<br>H0428: 1, H0644: 1,<br>H0063: 1, H0386: 1 and<br>L0747: 1.        |   | 12q21-q23 | 124200,<br>147440,<br>160781,<br>217300,<br>235800, |  |
| HSYEC21 | 1039891 | 678 | 411 - 2372 | 2853 |                   | H0521: 9, L0439: 9,<br>L0747: 8, L0655: 6,<br>L0748: 6, S0212: 5,<br>S6028: 4, L0483: 4,<br>L0794: 4, L0766: 4, |   |           |   |  |







|         |         |     |           |      |   |  |  |  |   |  |  |  |
|---------|---------|-----|-----------|------|---|--|--|--|---|--|--|--|
|         |         |     |           |      |   |  |  |  | H0271: 1, H0687: 1,<br>S0003: 1, S0214: 1,<br>H0428: 1, T0006: 1,<br>H0591: 1, H0551: 1,<br>T0067: 1, H0412: 1,<br>H0560: 1, H0641: 1,<br>S0210: 1, S0426: 1,<br>L0606: 1, L0657: 1,<br>L0518: 1, L0545: 1,<br>H0144: 1, H0519: 1,<br>S0126: 1, S0378: 1,<br>H0436: 1, S3014: 1,<br>L0750: 1, L0756: 1,<br>L0779: 1, L0780: 1,<br>L0758: 1, L0759: 1,<br>H0668: 1 and S0026: 1. |  |  |  |
| HKGCO25 | 1040384 | 679 | 3 - 719   | 2854 | Glu-53 to Phe-58,<br>Arg-70 to Phe-79,<br>Ile-94 to Val-102,<br>Thr-106 to Thr-118,<br>Glu-139 to Asp-149,<br>Asp-183 to Lys-215. |  |  |  |   |  |  |  |
| HNOJN70 | 1040385 | 680 | 273 - 425 | 2855 |   |  |  |  | L0766: 12, L0759: 8,<br>H0171: 6, L0754: 6,<br>L0731: 6, H0624: 5,<br>H0584: 5, H0031: 5,<br>S0422: 5, L0663: 5,<br>H0547: 5, L0756: 5,<br>S0276: 5, H0686: 4,<br>S0474: 4, L0662: 4,   |  |  |  |



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| L0777: 4, L0758: 4,<br>H0170: 3, L0717: 3,<br>H0457: 3, H0090: 3,<br>L0770: 3, L0794: 3,<br>L0650: 3, L0805: 3,<br>L0655: 3, L0659: 3,<br>L0666: 3, H0520: 3,<br>H0543: 3, S0412: 3,<br>H0657: 2, H0341: 2,<br>H0306: 2, H0402: 2,<br>S0358: 2, S0360: 2,<br>H0574: 2, T0060: 2,<br>H0318: 2, L0163: 2,<br>H0328: 2, L0483: 2,<br>H0591: 2, L0637: 2,<br>L0646: 2, L0771: 2,<br>L0521: 2, L0649: 2,<br>L0803: 2, L0657: 2,<br>L0656: 2, L0517: 2,<br>L0789: 2, H0539: 2,<br>H0521: 2, L0742: 2,<br>L0439: 2, L0751: 2,<br>L0747: 2, L0752: 2,<br>L0592: 2, L0599: 2,<br>L0594: 2, L0362: 2,<br>H0556: 1, H0167: 1,<br>H0685: 1, H0344: 1,<br>H0650: 1, S0116: 1,<br>S0418: 1, S0420: 1,<br>S0356: 1, S0376: 1, |
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| H0580: 1, S0045: 1,<br>S0046: 1, S6026: 1,<br>H0351: 1, S0222: 1,<br>H0438: 1, H0486: 1,<br>H0427: 1, L0021: 1,<br>H0097: 1, H0004: 1,<br>H0581: 1, L0041: 1,<br>H0050: 1, L0471: 1,<br>H0023: 1, H0057: 1,<br>H0015: 1, H0051: 1,<br>H0266: 1, S0336: 1,<br>H0687: 1, S0003: 1,<br>S0214: 1, H0622: 1,<br>H0674: 1, H0040: 1,<br>H0616: 1, H0413: 1,<br>T0069: 1, H0100: 1,<br>H0494: 1, H0561: 1,<br>L0065: 1, H0509: 1,<br>H0646: 1, L0598: 1,<br>L0763: 1, L0769: 1,<br>L0638: 1, L0796: 1,<br>L0761: 1, L0641: 1,<br>L0643: 1, L0549: 1,<br>L0498: 1, L0375: 1,<br>L0776: 1, L0527: 1,<br>L0526: 1, L0518: 1,<br>L0783: 1, L0809: 1,<br>L0664: 1, H0144: 1,<br>S0374: 1, T0068: 1,<br>L0438: 1, L0352: 1, |  |  |  |  |  |
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|---------|---------|-----|-----------|------|---|--|--|--|
| HADFS31 | 1040388 | 681 | 440 - 832 | 2856 | Ser-23 to Ser-34,<br>Lys-48 to Glu-53,<br>Cys-78 to Asn-88,<br>Ala-108 to Asp-113,<br>Glu-124 to Pro-131. | H0519: 1, H0593: 1,<br>H0682: 1, H0658: 1,<br>S0328: 1, H0518: 1,<br>H0694: 1, H0626: 1,<br>S0028: 1, L0743: 1,<br>L0740: 1, L0745: 1,<br>L0750: 1, L0780: 1,<br>H0445: 1, L0588: 1,<br>L0593: 1, L0595: 1,<br>S0026: 1, H0423: 1 and<br>S0424: 1.<br>L0439: 13, L0438: 8,<br>L0731: 7, L0756: 6,<br>L0803: 4, L0754: 4,<br>L0750: 4, S0358: 3,<br>H0716: 2, H0427: 2,<br>L0766: 2, L0659: 2,<br>L0783: 2, H0435: 2,<br>H0660: 2, L0755: 2,<br>L0758: 2, S0436: 2,<br>S0342: 1, H0650: 1,<br>L0443: 1, S0442: 1,<br>S0360: 1, H0587: 1,<br>H0632: 1, L0021: 1,<br>T0082: 1, H0051: 1,<br>S6028: 1, H0090: 1,<br>H0646: 1, L0640: 1,<br>L0770: 1, L0794: 1,<br>L0804: 1, L0805: 1,<br>L0809: 1, L0647: 1, |  |  |
|---------|---------|-----|-----------|------|---|--|--|--|



|         |         |     |            |      |  |   |                   |  |  |
|---------|---------|-----|------------|------|--|---|-------------------|--|--|
| HJDBC89 | 1040569 | 682 | 1418 - 726 | 2857 | Gly-11 to Pro-17,<br>Ser-61 to Gly-68,<br>Val-103 to Leu-108,<br>His-157 to Pro-162,<br>Glu-197 to Pro-203,<br>Gly-207 to Thr-213. | L0789: 1, L0666: 1,<br>L0663: 1, H0690: 1,<br>H0659: 1, H0670: 1,<br>S0328: 1, S0028: 1,<br>L0747: 1 and L0752: 1.<br><br>L0439: 5, L0749: 5,<br>L0770: 4, L0764: 4,<br>L0438: 4, S0126: 4,<br>L0758: 4, S0358: 3,<br>L0768: 3, L0774: 3,<br>L0783: 3, H0660: 3,<br>S0152: 3, L0752: 3,<br>L0755: 3, L0731: 3,<br>L0592: 3, S0026: 3,<br>H0656: 2, S0360: 2,<br>S0010: 2, H0050: 2,<br>H0169: 2, T0042: 2,<br>L0775: 2, L0518: 2,<br>L0809: 2, L0664: 2,<br>L0665: 2, H0672: 2,<br>L0754: 2, H0543: 2,<br>L0615: 1, H0686: 1,<br>S0116: 1, S0420: 1,<br>S0408: 1, T0112: 1,<br>H0156: 1, H0575: 1,<br>H0706: 1, H0546: 1,<br>H0572: 1, H0123: 1,<br>L0471: 1, H0024: 1,<br>H0373: 1, S0388: 1,<br>T0010: 1, H0510: 1, | 14q24.1-<br>q24.3 | 104311,<br>109150,<br>182600,<br>245200,<br>601208 |  |
|---------|---------|-----|------------|------|--|---|-------------------|--|--|



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|---------|---------|-----|-----------|------|-------------------|---|--|--|
| HTAIX75 | 1040591 | 683 | 129 - 557 | 2858 | Lys-34 to His-39. | S0003: 1, H0424: 1,<br>H0031: 1, H0553: 1,<br>H0165: 1, H0673: 1,<br>H0708: 1, S0036: 1,<br>H0040: 1, T0067: 1,<br>H0488: 1, H0412: 1,<br>S0039: 1, H0494: 1,<br>H0509: 1, H0132: 1,<br>S0144: 1, H0538: 1,<br>H0529: 1, L0520: 1,<br>L0800: 1, L0773: 1,<br>L0794: 1, L0803: 1,<br>L0804: 1, L0659: 1,<br>L0528: 1, S0374: 1,<br>S0148: 1, H0682: 1,<br>H0696: 1, S0044: 1,<br>L0748: 1, L0751: 1,<br>L0745: 1, L0757: 1,<br>H0445: 1, S0276: 1 and<br>S0196: 1. |  |  |
|         |         |     |           |      |                   | AR055: 14, AR033: 8,<br>AR052: 8, AR096: 7,<br>AR053: 7, AR061: 7,<br>AR089: 6, AR060: 6,<br>AR104: 3, AR039: 2<br>L0662: 2, L0804: 2,<br>L0748: 2, L0439: 2,<br>L0779: 2, S0360: 1,<br>H0635: 1, H0457: 1,<br>H0179: 1, L0763: 1.  |  |  |



|         |         |     |          |      |  |  |  |       |                              |  |
|---------|---------|-----|----------|------|--|--|--|-------|------------------------------|--|
|         |         |     |          |      |  |  | L0646: 1, L0645: 1,<br>L0766: 1, L0659: 1 and<br>H0658: 1.   |       |                              |  |
| HODBO29 | 1040620 | 684 | 3 - 413  | 2859 |  |  | H0373: 2, H0328: 2,<br>H0428: 2, L0769: 2,<br>L0439: 2, T0002: 1,<br>S0376: 1, H0489: 1,<br>S0278: 1, H0550: 1,<br>H0253: 1, H0052: 1,<br>H0063: 1, H0131: 1,<br>L0764: 1, L0766: 1,<br>L0352: 1, S0126: 1,<br>S0380: 1, L0740: 1,<br>L0747: 1, L0752: 1,<br>L0592: 1, L0595: 1 and<br>H0542: 1. |       |                              |  |
| HOCOF27 | 1040631 | 685 | 76 - 687 | 2860 |  |  | H0264: 1, L0766: 1,<br>H0660: 1 and H0539: 1.  |       |                              |  |
| HSPSE88 | 1040694 | 686 | 2 - 922  | 2861 |  |  | L0749: 7, S0026: 6,<br>H0616: 4, L0766: 4,<br>L0803: 4, L0665: 4,<br>L0748: 4, L0740: 4,<br>H0624: 3, H0170: 3,<br>H0657: 3, S0358: 3,<br>S0003: 3, L0455: 3,<br>L0498: 3, L0809: 3,<br>L0666: 3, H0659: 3,<br>H0423: 3, S0442: 2,<br>H0083: 2, H0038: 2,<br>L0500: 2, L0764: 2,                 | 11p15 | 108985,<br>186921,<br>602092 |  |



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|         |         |     |           |      |  |  |  |  |   |  |  |
|---------|---------|-----|-----------|------|--|--|--|--|---|--|--|
|         |         |     |           |      |  |  |  | L0651: 1, L0805: 1,<br>L0653: 1, L0776: 1,<br>L0655: 1, L0512: 1,<br>L0659: 1, L0547: 1,<br>L0783: 1, L0383: 1,<br>L0663: 1, S0374: 1,<br>L0352: 1, H0547: 1,<br>H0593: 1, H0682: 1,<br>H0683: 1, H0684: 1,<br>H0696: 1, S0146: 1,<br>H0187: 1, H0478: 1,<br>S3012: 1, L0786: 1,<br>L0757: 1, S0434: 1,<br>L0592: 1, L0485: 1,<br>L0599: 1, L0608: 1,<br>L0594: 1, S0276: 1,<br>S0460: 1 and H0506: 1. |   |  |  |
| HSKXM78 | 1040826 | 687 | 1 - 354   | 2862 | Pro-19 to Asn-26,<br>His-58 to Pro-63. |  |  | H0556: 2, H0650: 1,<br>S0376: 1, S0474: 1,<br>H0038: 1, H0529: 1,<br>H0683: 1, S3014: 1,<br>S0206: 1, L0740: 1 and<br>L0591: 1.  |   |  |  |
| HNLMB92 | 1040913 | 688 | 352 - 753 | 2863 | Ala-1 to Gly-21,<br>Pro-28 to Gln-35.  |  |  | S0358: 8, S0010: 5,<br>S3014: 5, S0126: 4,<br>H0333: 3, T0067: 3,<br>H0547: 3, L0747: 3,<br>S0045: 2, H0486: 2,<br>H0599: 2, S0346: 2,<br>L0471: 2, H0428: 2,  | X |  |  |



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|---------|---------|-----|-----------|------|-------------------|---|--|--|
| HE8ON57 | 1040925 | 689 | 577 - 149 | 2864 | Pro-18 to Asp-25. | H0616: 2, H0658: 2,<br>S0028: 2, L0742: 2,<br>H0170: 1, S0116: 1,<br>H0449: 1, S0418: 1,<br>S6026: 1, H0550: 1,<br>S0222: 1, H0438: 1,<br>T0040: 1, H0013: 1,<br>H0156: 1, T0082: 1,<br>H0196: 1, H0251: 1,<br>H0530: 1, H0150: 1,<br>H0023: 1, H0266: 1,<br>H0687: 1, H0615: 1,<br>T0006: 1, H0031: 1,<br>H0068: 1, H0551: 1,<br>H0100: 1, T0041: 1,<br>S0150: 1, H0652: 1,<br>S0144: 1, H0529: 1,<br>L0543: 1, H0144: 1,<br>S0374: 1, H0691: 1,<br>H0520: 1, H0689: 1,<br>H0684: 1, H0670: 1,<br>H0660: 1, H0672: 1,<br>H0539: 1, S3012: 1,<br>S0027: 1, L0744: 1,<br>L0754: 1, L0749: 1,<br>L0750: 1, L0752: 1,<br>L0755: 1, L0731: 1,<br>L0757: 1 and S0194: 1. |  |  |
|         |         |     |           |      |                   | H0619: 1, H0013: 1,<br>L0794: 1 and L0788: 1.   |  |  |



|         |         |     |            |      |  |  |         |  |
|---------|---------|-----|------------|------|--|--|---------|--|
| HOCOC14 | 1040932 | 690 | 494 - 1384 | 2865 | Leu-32 to Lys-43,<br>Phe-92 to Arg-98,<br>Glu-118 to Thr-136,<br>Pro-173 to Tyr-178,<br>Pro-215 to Asn-222,<br>Leu-230 to Asn-235. | H0556: 8, L0758: 7,<br>L0593: 7, H0542: 7,<br>L0601: 6, L0747: 5,<br>H0618: 4, H0620: 4,<br>H0617: 4, H0494: 4,<br>L0439: 4, L0751: 4,<br>S0420: 3, S0046: 3,<br>H0622: 3, H0087: 3,<br>L0766: 3, H0690: 3,<br>H0670: 3, S0328: 3,<br>L0748: 3, L0754: 3,<br>L0731: 3, H0543: 3,<br>H0265: 2, H0650: 2,<br>H0484: 2, H0255: 2,<br>S0418: 2, H0549: 2,<br>H0333: 2, H0024: 2,<br>H0551: 2, S0150: 2,<br>L0764: 2, L0662: 2,<br>L0375: 2, L0663: 2,<br>L0665: 2, H0660: 2,<br>H0521: 2, S0146: 2,<br>L0741: 2, L0779: 2,<br>L0361: 2, L0603: 2,<br>H0422: 2, H0170: 1,<br>S0040: 1, H0295: 1,<br>H0294: 1, H0657: 1,<br>H0656: 1, H0341: 1,<br>S0212: 1, H0661: 1,<br>S0442: 1, S0354: 1,<br>S0360: 1, L0717: 1, | 19q13.1 | 164731,<br>172400,<br>172400,<br>180901,<br>180901,<br>221770,<br>248600,<br>600918,<br>602716 |
|---------|---------|-----|------------|------|--|--|---------|--|



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|---------|---------|-----|------------|------|---|--|--|--|--|--|---------|
|         |         |     |            |      |   |  |  | L0789: 1, L0790: 1,<br>L0666: 1, L0664: 1,<br>H0547: 1, H0593: 1,<br>H0689: 1, H0684: 1,<br>S0330: 1, H0539: 1,<br>S0152: 1, H0522: 1,<br>H0134: 1, S0406: 1,<br>H0555: 1, H0627: 1,<br>L0743: 1, L0750: 1,<br>L0756: 1, L0752: 1,<br>L0757: 1, S0434: 1,<br>S0436: 1, S0276: 1,<br>H0423: 1 and S0424: 1. |  |  |         |
| HOGDP49 | 1041049 | 691 | 1 - 489    | 2866 | Pro-6 to Gly-12,<br>Ala-30 to Arg-35,<br>Arg-90 to Thr-102,<br>Phe-112 to Asp-120,<br>Asn-157 to Thr-163.                     |  |  | H0265: 2, H0556: 1,<br>S0418: 1, S0376: 1,<br>T0060: 1, S0280: 1,<br>H0615: 1, H0628: 1,<br>H0059: 1, H0100: 1,<br>L0438: 1, S0126: 1,<br>H0435: 1 and H0660: 1.<br>H0415: 2   |  |  |         |
| HOFMK22 | 1041070 | 692 | 3 - 359    | 2867 | Asp-22 to Val-42,<br>Phe-50 to Tyr-55,<br>Leu-65 to Gln-70.   |  |  |  |  |  |         |
| HBGNT69 | 1041900 | 693 | 808 - 383  | 2868 | Glu-20 to Ser-27,<br>Ala-49 to Pro-55,<br>Phe-66 to Asp-71,<br>Ala-77 to Val-83,<br>Pro-85 to Tyr-103,<br>Pro-135 to Ala-142. |  |  | H0052: 3, H0617: 3,<br>H0135: 3, H0012: 2,<br>H0253: 1, S0210: 1,<br>L0659: 1 and L0779: 1.  |  |  |         |
| HSPSI42 | 1042462 | 694 | 3684 - 283 | 2869 | Pro-5 to Ser-12,  |  |  | L0666: 16, L0751: 15, Xp11.23  |  |  | 300047, |



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| 1028,<br>Lys-1082 to Met-<br>1091,<br>Val-1098 to Gly-<br>1104,<br>Cys-1116 to Glu-<br>1122. | H0100: 2, S0142: 2,<br>L5575: 2, L0372: 2,<br>L0764: 2, L0774: 2,<br>L0775: 2, L0378: 2,<br>L0776: 2, L0657: 2,<br>L0636: 2, H0144: 2,<br>L0565: 2, H0690: 2,<br>H0660: 2, S3014: 2,<br>S0028: 2, L0746: 2,<br>L0749: 2, L0752: 2,<br>L0753: 2, S0436: 2,<br>L0588: 2, L0608: 2,<br>S0026: 2, H0352: 2,<br>H0395: 1, H0713: 1,<br>L0785: 1, H0483: 1,<br>S0418: 1, S0442: 1,<br>H0733: 1, H0208: 1,<br>S0045: 1, H0393: 1,<br>H0351: 1, S0278: 1,<br>H0549: 1, L0622: 1,<br>T0039: 1, H0250: 1,<br>H0618: 1, T0048: 1,<br>H0581: 1, H0596: 1,<br>L0040: 1, H0597: 1,<br>H0544: 1, L0041: 1,<br>H0086: 1, N0006: 1,<br>H0620: 1, H0057: 1,<br>H0051: 1, S0051: 1,<br>H0083: 1, H0594: 1,<br>H0188: 1, H0039: 1. |
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| L0483: 1, T0006: 1,<br>H0604: 1, H0405: 1,<br>H0181: 1, H0617: 1,<br>H0169: 1, L0455: 1,<br>H0135: 1, H0038: 1,<br>H0087: 1, T0067: 1,<br>H0412: 1, H0413: 1,<br>H0059: 1, T0069: 1,<br>T0004: 1, L0351: 1,<br>T0041: 1, S0440: 1,<br>H0641: 1, S0422: 1,<br>H0529: 1, L0536: 1,<br>L0535: 1, L0638: 1,<br>L0637: 1, L0646: 1,<br>L0521: 1, L0794: 1,<br>L0650: 1, L0376: 1,<br>L0653: 1, L0655: 1,<br>L0606: 1, L0635: 1,<br>L0518: 1, L0382: 1,<br>L0809: 1, L0519: 1,<br>L0541: 1, L0790: 1,<br>L0793: 1, L0532: 1,<br>H0723: 1, H0520: 1,<br>H0593: 1, H0683: 1,<br>H0684: 1, H0659: 1,<br>H0648: 1, H0672: 1,<br>H0521: 1, H0696: 1,<br>H0694: 1, S0037: 1,<br>L0744: 1, L0740: 1,<br>L0780: 1, L0757: 1, |  |
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|---------|---------|-----|-----------|------|---|--|--|--|-------|---|
|         |         |     |           |      |   |  | L0759: 1, H0445: 1,<br>L0587: 1, L0589: 1,<br>L0593: 1, L0594: 1,<br>S0106: 1, S0011: 1,<br>H0136: 1, H0423: 1 and<br>H0293: 1.  |  |       |   |
| HPDQD23 | 1042649 | 695 | 174 - 344 | 2870 | Leu-17 to Glu-22,<br>Pro-44 to Gly-51.  |  | H0657: 4, H0687: 2,<br>H0658: 2, H0422: 2,<br>H0222: 1, H0581: 1,<br>S0050: 1, H0412: 1,<br>H0641: 1, H0538: 1,<br>L0648: 1, L0662: 1,<br>L0766: 1, L0775: 1,<br>L0805: 1, L0809: 1,<br>L0438: 1, H0689: 1,<br>S0328: 1, H0525: 1,<br>L0439: 1 and L0755: 1.   |  | 12q22 | 147440,<br>201470,<br>235800,<br>273300 |
| HWMB10  | 1042859 | 696 | 39 - 476  | 2871 | Pro-18 to Pro-24,<br>Thr-45 to Gly-54,<br>Ser-60 to Ser-67,<br>Ala-82 to His-92,<br>Pro-94 to Ser-106,<br>Pro-126 to Arg-133. |  | S0410: 52, H0617: 5,<br>L0774: 4, S0408: 3,<br>H0360: 3, H0486: 3,<br>L0809: 3, S0380: 3,<br>L0751: 3, L0749: 3,<br>L0361: 3, S0358: 2,<br>S0376: 2, S0360: 2,<br>L0764: 2, L0779: 2,<br>L0752: 2, H0484: 1,<br>H0483: 1, S0442: 1,<br>H0734: 1, H0370: 1,<br>H0257: 1, L0623: 1,<br>H0599: 1, H0575: 1, |  |       |   |



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|---------|---------|-----|------------|------|---|---|--|--|
|         |         |     |            |      |   | H0706: 1, H0744: 1,<br>H0231: 1, L0163: 1,<br>H0083: 1, H0510: 1,<br>H0606: 1, H0038: 1,<br>T0067: 1, S0438: 1,<br>S0422: 1, L0770: 1,<br>L0803: 1, L0806: 1,<br>L0776: 1, L0792: 1,<br>L0793: 1, H0660: 1,<br>S0406: 1, H0631: 1,<br>L0750: 1, L0777: 1,<br>H0445: 1, S0436: 1,<br>H0543: 1 and S0424: 1.  |  |  |
| HACNG39 | 1042871 | 697 | 2534 - 900 | 2872 | Asp-16 to Ser-25,<br>Arg-52 to Lys-74,<br>Ile-102 to Asn-109,<br>Asp-138 to Gly-149,<br>Ser-161 to Thr-168,<br>Asn-225 to Arg-235,<br>Asn-247 to Lys-256,<br>His-302 to Cys-311,<br>Ile-324 to Ser-347,<br>Cys-355 to Tyr-361,<br>Cys-365 to Pro-375,<br>Ile-389 to Gln-398,<br>Ile-429 to His-502,<br>Thr-505 to Asp-533,<br>Lys-539 to Ser-545. | L0805: 5, L0766: 4,<br>H0341: 3, S0440: 3,<br>H0650: 2, H0656: 2,<br>H0156: 2, S0003: 2,<br>H0591: 2, H0264: 2,<br>H0560: 2, L0598: 2,<br>S0374: 2, L0438: 2,<br>L0749: 2, L0752: 2,<br>H0423: 2, H0685: 1,<br>H0449: 1, H0458: 1,<br>L0005: 1, S0444: 1,<br>S0408: 1, H0580: 1,<br>H0619: 1, H0486: 1,<br>H0013: 1, H0581: 1,<br>H0194: 1, T0103: 1,<br>H0083: 1, H0551: 1,<br>H0477: 1, H0488: 1, |  |  |



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|---------|---------|-----|----------|------|-------------------|--|--|--|
| HETKL27 | 1042951 | 698 | 32 - 676 | 2873 | Arg-11 to Gly-36. | <p>S0464: 1, L0773: 1,<br/>L0803: 1, L0776: 1,<br/>L0657: 1, L0789: 1,<br/>L0665: 1, H0547: 1,<br/>H0670: 1, S3012: 1,<br/>L0748: 1, L0779: 1,<br/>L0777: 1, L0758: 1,<br/>S0436: 1, S0194: 1 and<br/>H0422: 1.</p> <p>AR089: 1, AR060: 1,<br/>AR055: 1, AR096: 1,<br/>AR053: 0, AR061: 0,<br/>AR033: 0, AR104: 0,<br/>AR039: 0</p> <p>L0439: 19, H0046: 11,<br/>L0659: 8, L0752: 7,<br/>L0662: 6, H0435: 6,<br/>H0648: 6, L0803: 5,<br/>S0356: 4, S0440: 4,<br/>L0794: 4, L0663: 4,<br/>H0539: 4, S0152: 4,<br/>L0747: 4, L0779: 4,<br/>H0661: 3, S0360: 3,<br/>S0408: 3, H0598: 3,<br/>L0809: 3, L0665: 3,<br/>S0374: 3, L0438: 3,<br/>L0751: 3, L0731: 3,<br/>L0362: 3, H0171: 2,<br/>S0358: 2, S0376: 2,<br/>H0676: 2, H0393: 2,</p> |  |  |
|---------|---------|-----|----------|------|-------------------|--|--|--|



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|--|--|--|--|--|--|--|
|  | H0586: 2, H0052: 2,<br>T0067: 2, H0646: 2,<br>L0646: 2, L0764: 2,<br>L0364: 2, L0775: 2,<br>L0806: 2, L0657: 2,<br>L0788: 2, L0666: 2,<br>H0659: 2, H0666: 2,<br>S0330: 2, L0748: 2,<br>L0745: 2, L0750: 2,<br>L0777: 2, L0759: 2,<br>L0599: 2, L0608: 2,<br>L0411: 1, H0686: 1,<br>S0444: 1, H0441: 1,<br>H0333: 1, T0109: 1,<br>L0022: 1, H0575: 1,<br>S0010: 1, S0346: 1,<br>H0596: 1, L0738: 1,<br>S6028: 1, H0688: 1,<br>T0023: 1, T0006: 1,<br>H0644: 1, H0165: 1,<br>H0040: 1, H0494: 1,<br>S0466: 1, S0438: 1,<br>L0762: 1, L0640: 1,<br>L0772: 1, L0800: 1,<br>L0648: 1, L0389: 1,<br>L0805: 1, L0653: 1,<br>L0776: 1, L0382: 1,<br>L0789: 1, L0532: 1,<br>L0664: 1, H0547: 1,<br>H0689: 1, H0690: 1, |  |  |  |  |  |
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|---------|---------|-----|---------|------|--|---|------|--|--|--|
|         |         |     |         |      |  | H0684: 1, H0658: 1,<br>S0380: 1, H0704: 1,<br>S0168: 1, H0478: 1,<br>S0037: 1, L0742: 1,<br>L0749: 1, L0755: 1,<br>S0434: 1, S0436: 1 and<br>H0506: 1.  |      |  |  |  |
| HPCTH04 | 1043273 | 699 | 3 - 494 | 2874 |  | H0638: 73, H0641: 67, 9q31<br>S0358: 25, H0521: 24,<br>L0747: 23, S0408: 17,<br>S0360: 16, H0659: 14,<br>L0748: 13, L0731: 13,<br>H0250: 12, H0494: 12,<br>L0757: 12, S0444: 11,<br>S0026: 11, S0440: 10,<br>S0328: 10, S0206: 9,<br>S0132: 8, S0144: 8,<br>S0007: 7, H0574: 7,<br>S0374: 7, S0126: 7,<br>S0330: 7, L0754: 7,<br>L0749: 7, H0140: 6,<br>H0545: 6, H0316: 6,<br>S0142: 6, L0775: 6,<br>H0522: 6, S0242: 6,<br>H0657: 5, S0046: 5,<br>H0486: 5, S0406: 5,<br>S0027: 5, L0750: 5,<br>S0040: 4, S0442: 4,<br>H0546: 4, H0684: 4,<br>H0648: 4, S3012: 4, | 9q31 | 109400,<br>132800,<br>132800,<br>186855,<br>223900,<br>253800,<br>253800,<br>278700,<br>602088 |  |  |



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|  | S3014: 4, L0742: 4,<br>L0740: 4, L0756: 4,<br>L0752: 4, L0755: 4,<br>L0758: 4, H0686: 3,<br>H0341: 3, H0664: 3,<br>S0222: 3, H0592: 3,<br>H0331: 3, T0109: 3,<br>T0115: 3, H0046: 3,<br>H0014: 3, S0003: 3,<br>L0809: 3, H0547: 3,<br>H0660: 3, H0667: 3,<br>H0542: 3, H0171: 2,<br>T0049: 2, H0663: 2,<br>S0420: 2, S0356: 2,<br>H0580: 2, S0045: 2,<br>S0278: 2, H0537: 2,<br>H0333: 2, H0069: 2,<br>H0427: 2, H0098: 2,<br>H0597: 2, H0544: 2,<br>H0150: 2, L0471: 2,<br>H0060: 2, H0109: 2,<br>H0266: 2, H0644: 2,<br>H0032: 2, S0438: 2,<br>H0633: 2, L0762: 2,<br>L0769: 2, L0372: 2,<br>L0662: 2, L0806: 2,<br>L0789: 2, L0666: 2,<br>H0682: 2, H0670: 2,<br>L0602: 2, H0696: 2,<br>S0404: 2, L0588: 2, |  |  |  |  |  |
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| L0581: 2, L0361: 2,<br>S0194: 2, L0615: 1,<br>H0141: 1, H0159: 1,<br>H0585: 1, S0342: 1,<br>H0294: 1, S0430: 1,<br>H0656: 1, H0661: 1,<br>H0125: 1, S0354: 1,<br>H0675: 1, H0637: 1,<br>H0208: 1, H0393: 1,<br>H0411: 1, H0586: 1,<br>H0497: 1, H0642: 1,<br>H0643: 1, H0632: 1,<br>S0280: 1, H0042: 1,<br>H0575: 1, H0318: 1,<br>H0263: 1, T0110: 1,<br>H0121: 1, H0530: 1,<br>H0350: 1, H0015: 1,<br>S0388: 1, S0051: 1,<br>H0375: 1, H0061: 1,<br>S0022: 1, S0214: 1,<br>H0328: 1, L0483: 1,<br>H0031: 1, H0628: 1,<br>L0055: 1, H0165: 1,<br>H0674: 1, H0598: 1,<br>H0591: 1, H0038: 1,<br>H0040: 1, H0087: 1,<br>H0272: 1, H0413: 1,<br>L0475: 1, S0448: 1,<br>S0464: 1, S0306: 1,<br>S0466: 1, H0130: 1, |  |  |  |  |  |  |
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|----------|---------|-----|------------|------|--|--|--|---|-------------|--|
| HOC PK85 | 1043351 | 700 | 1216 - 305 | 2875 |  |  |  | H0647: 1, H0646: 1,<br>H0652: 1, S0344: 1,<br>S0002: 1, L0598: 1,<br>H0529: 1, L0520: 1,<br>L0645: 1, L0773: 1,<br>L0521: 1, L0626: 1,<br>L0766: 1, L0649: 1,<br>L0522: 1, L0653: 1,<br>L0654: 1, L0379: 1,<br>L0657: 1, L0559: 1,<br>L0526: 1, L0782: 1,<br>L0382: 1, L0519: 1,<br>L0647: 1, S0052: 1,<br>H0144: 1, H0435: 1,<br>H0658: 1, H0672: 1,<br>S0378: 1, S0152: 1,<br>H0523: 1, H0187: 1,<br>H0627: 1, H0631: 1,<br>S0028: 1, S0032: 1,<br>L0759: 1, S0260: 1,<br>S0434: 1, L0608: 1,<br>H0668: 1, H0665: 1,<br>H0136: 1, S0192: 1,<br>S0196: 1, S0424: 1,<br>S0462: 1, H0506: 1,<br>H0293: 1 and H0352: 1. | 19q12-q13.1 | 164731,<br>172400,<br>172400,<br>180901. |
|----------|---------|-----|------------|------|--|--|--|---|-------------|--|







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| L0439: 2, L0751: 2,<br>L0750: 2, L0752: 2,<br>L0596: 2, S0424: 2,<br>H0506: 2, H0585: 1,<br>H0294: 1, H0583: 1,<br>H0656: 1, S0116: 1,<br>H0483: 1, T0007: 1,<br>S0354: 1, S0132: 1,<br>H0369: 1, H0549: 1,<br>H0550: 1, H0370: 1,<br>H0409: 1, H0299: 1,<br>H0600: 1, H0497: 1,<br>H0574: 1, H0559: 1,<br>L0623: 1, H0486: 1,<br>H0244: 1, S0280: 1,<br>H0156: 1, H0599: 1,<br>H0575: 1, H0036: 1,<br>H0004: 1, H0618: 1,<br>S0346: 1, H0318: 1,<br>S0049: 1, H0052: 1,<br>H0085: 1, H0235: 1,<br>H0545: 1, S0388: 1,<br>H0021: 1, H0354: 1,<br>H0355: 1, S6028: 1,<br>H0615: 1, H0428: 1,<br>H0424: 1, S0366: 1,<br>S0036: 1, H0135: 1,<br>S0466: 1, L0065: 1,<br>H0633: 1, H0646: 1,<br>S0144: 1, S0344: 1, |
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|         |         |     |         |      |  |   |           |   |
|---------|---------|-----|---------|------|--|---|-----------|---|
| HVVBM94 | 1043532 | 701 | 1 - 852 | 2876 | Lys-1 to Cys-12,<br>Gln-51 to Leu-56,<br>Asp-63 to Asn-70,<br>Lys-75 to Gln-80,<br>Pro-116 to Thr-122,<br>Gly-181 to Gly-190,<br>Asp-210 to Gly-218, | S0422: 1, S0426: 1,<br>L0763: 1, L0638: 1,<br>L0796: 1, L0761: 1,<br>L0667: 1, L0372: 1,<br>L0800: 1, L0642: 1,<br>L0804: 1, L0774: 1,<br>L0775: 1, L0651: 1,<br>L0633: 1, L0657: 1,<br>L0558: 1, L0526: 1,<br>L0384: 1, L0666: 1,<br>L0664: 1, L0665: 1,<br>H0520: 1, H0519: 1,<br>H0593: 1, H0689: 1,<br>H0659: 1, S0328: 1,<br>S0380: 1, H0518: 1,<br>S0152: 1, H0522: 1,<br>H0134: 1, S012: 1,<br>S0390: 1, L0749: 1,<br>L0780: 1, L0757: 1,<br>S0031: 1, S0436: 1,<br>L0595: 1, S0026: 1,<br>H0653: 1, H0665: 1 and<br>H0543: 1. | 11q21-q22 | 105580,<br>133780,<br>203100,<br>203100,<br>602574,<br>602574 |
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| Thr-252 to Ile-268,<br>Leu-274 to Lys-284. | H0657: 4, H0125: 4,<br>L0655: 4, L0666: 4,<br>S0358: 3, H0486: 3,<br>H0014: 3, H0648: 3,<br>L0602: 3, H0255: 2,<br>H0602: 2, H0039: 2,<br>H0622: 2, H0264: 2,<br>L0763: 2, L0766: 2,<br>L0774: 2, L0806: 2,<br>L0776: 2, L0665: 2,<br>H0672: 2, S0328: 2,<br>H0134: 2, H0555: 2,<br>L0743: 2, H0671: 1,<br>H0402: 1, H0638: 1,<br>S0007: 1, H0592: 1,<br>H0250: 1, H0635: 1,<br>H0599: 1, H0108: 1,<br>H0004: 1, H0597: 1,<br>H0231: 1, H0046: 1,<br>H0169: 1, H0316: 1,<br>T0042: 1, H0646: 1,<br>L0762: 1, L0800: 1,<br>L0767: 1, L0768: 1,<br>L0387: 1, L5574: 1,<br>L0527: 1, L0657: 1,<br>L0634: 1, L0809: 1,<br>L0792: 1, L0663: 1,<br>H0690: 1, H0682: 1,<br>H0435: 1, H0659: 1,<br>S0378: 1, H0694: 1. |
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|---------|---------|-----|----------------|------|---|--|--------|--|
| HVVBC43 | 1043553 | 702 | 2754 -<br>2083 | 2877 | Arg-3 to Thr-10,<br>Arg-26 to Gly-42,<br>Asn-46 to Ser-59,<br>Glu-106 to Ala-122,<br>Ser-129 to Asp-139,<br>Thr-144 to Thr-156,<br>Leu-197 to Thr-206,<br>Pro-208 to Tyr-219. | L0747: 1, L0749: 1,<br>L0779: 1, L0755: 1,<br>S0308: 1 and H0506: 1,<br>L0717: 10, L0748: 9,<br>L0439: 8, H0623: 7,<br>H0052: 6, H0013: 5,<br>L0776: 5, L0438: 5,<br>L0740: 5, H0521: 4,<br>L0756: 4, H0265: 3,<br>H0556: 3, S0360: 3,<br>L0010: 3, H0620: 3,<br>L0662: 3, L0665: 3,<br>H0522: 3, S0116: 2,<br>S0418: 2, S0358: 2,<br>S0046: 2, H0635: 2,<br>H0575: 2, H0590: 2,<br>S0010: 2, L0109: 2,<br>L0471: 2, H0428: 2,<br>H0622: 2, H0031: 2,<br>H0038: 2, H0264: 2,<br>H0059: 2, S0015: 2,<br>H0641: 2, L0770: 2,<br>L0769: 2, L0773: 2,<br>L0774: 2, L0655: 2,<br>L0659: 2, L0789: 2,<br>S0126: 2, S0037: 2,<br>L0744: 2, L0747: 2,<br>L0779: 2, L0758: 2,<br>L0601: 2, H0170: 1,<br>H0686: 1, S0040: 1, | 4p16.3 | 134934,<br>134934,<br>134934,<br>134934,<br>134934,<br>143100,<br>180072,<br>180072,<br>194190,<br>252800,<br>252800,<br>252800,<br>600965 |
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| H0294: 1, T0049: 1,<br>H0650: 1, H0657: 1,<br>S0212: 1, S0282: 1,<br>H0484: 1, H0663: 1,<br>H0305: 1, S0140: 1,<br>H0393: 1, H0351: 1,<br>H0437: 1, H0442: 1,<br>H0250: 1, H0427: 1,<br>H0156: 1, H0599: 1,<br>H0036: 1, S0346: 1,<br>H0318: 1, H0251: 1,<br>H0457: 1, H0009: 1,<br>H0123: 1, H0050: 1,<br>H0024: 1, H0051: 1,<br>H0083: 1, H0266: 1,<br>H0416: 1, H0286: 1,<br>H0328: 1, L0483: 1,<br>H0030: 1, H0376: 1,<br>H0598: 1, H0090: 1,<br>H0634: 1, H0616: 1,<br>H0551: 1, H0268: 1,<br>H0269: 1, H0100: 1,<br>H0494: 1, S0144: 1,<br>L0763: 1, L0772: 1,<br>L0646: 1, L0641: 1,<br>L0771: 1, L0767: 1,<br>L0766: 1, L0804: 1,<br>L0606: 1, L0809: 1,<br>L0666: 1, L0663: 1,<br>L0664: 1, H0144: 1, |
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|---------|---------|-----|----------|------|--|--|--|--|--|--|--|
|         |         |     |          |      |  |  |  | H0520: 1, H0519: 1,<br>H0682: 1, H0659: 1,<br>H0672: 1, S0328: 1,<br>H0539: 1, S0152: 1,<br>H0555: 1, H0626: 1,<br>S3014: 1, S0028: 1,<br>L0751: 1, L0786: 1,<br>L0777: 1, L0731: 1,<br>L0757: 1, L0759: 1,<br>H0667: 1, H0542: 1,<br>H0422: 1 and H0677: 1. |  |  |  |
| HTPDM31 | 1044199 | 703 | 1010 - 3 | 2878 | Ser-49 to Leu-55,<br>Pro-151 to Asp-157,<br>Ala-168 to Arg-184,<br>Pro-191 to Pro-215,<br>Pro-232 to Pro-240,<br>Pro-255 to Arg-268. |  |  | H0617: 6, L0666: 3,<br>H0188: 2, H0181: 2,<br>H0196: 1, H0039: 1,<br>H0673: 1, L0373: 1,<br>L0775: 1, L0659: 1,<br>L0809: 1, L0789: 1,<br>L0663: 1, L0665: 1,<br>H0658: 1, S0330: 1,<br>S0378: 1 and S0406: 1.   |  |  |  |
| HSQEK12 | 1044577 | 704 | 35 - 439 | 2879 | Ala-1 to Asp-16.   |  |  | L0748: 5, L0439: 5,<br>L0751: 3, L0777: 3,<br>L0758: 2, L0596: 2,<br>L0603: 2, S0001: 1,<br>S0278: 1, H0581: 1,<br>H0052: 1, H0123: 1,<br>H0620: 1, S0388: 1,<br>H0628: 1, H0040: 1,<br>H0616: 1, H0646: 1,<br>L0763: 1, L0770: 1,                           |  |  |  |



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| HPDRZ16 | 1044618 | 705 | 187 - 834 | 2880 | Pro-16 to Ala-22,<br>Ala-26 to Val-31,<br>Ser-66 to Val-73,<br>Ala-80 to Pro-90,<br>Glu-127 to Ala-135,<br>Glu-142 to Glu-161,<br>Leu-166 to Trp-173,<br>Pro-176 to Gln-183,<br>Arg-204 to Asp-211. | L0769: 1, L0800: 1,<br>L0794: 1, L0803: 1,<br>L0378: 1, L0776: 1,<br>L0655: 1, L0789: 1,<br>H0670: 1, S0328: 1,<br>H0696: 1, S0406: 1,<br>H0436: 1, L0746: 1,<br>L0779: 1, S0031: 1,<br>L0595: 1, S0011: 1 and<br>S0026: 1. | Xq13.1 | 304040,<br>305100,<br>305450,<br>309605,<br>312760,<br>314250,<br>314580 |
|---------|---------|-----|-----------|------|---|---|--------|--|



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|  | L0768: 2, L0809: 2,<br>L0788: 2, H0699: 2,<br>H0539: 2, S0380: 2,<br>S0406: 2, L0748: 2,<br>L0756: 2, L0777: 2,<br>L0755: 2, H0444: 2,<br>H0650: 1, H0656: 1,<br>S0298: 1, S0212: 1,<br>H0661: 1, H0306: 1,<br>S0420: 1, S0442: 1,<br>S0354: 1, S0360: 1,<br>S0408: 1, H0730: 1,<br>S0045: 1, S0278: 1,<br>H0592: 1, H0257: 1,<br>H0250: 1, H0069: 1,<br>H0427: 1, S0280: 1,<br>H0156: 1, H0599: 1,<br>H0253: 1, H0581: 1,<br>H0309: 1, H0544: 1,<br>H0563: 1, H0569: 1,<br>H0012: 1, H0373: 1,<br>H0051: 1, H0510: 1,<br>H0416: 1, H0292: 1,<br>H0252: 1, H0615: 1,<br>H0606: 1, H0708: 1,<br>H0264: 1, S0438: 1,<br>S0440: 1, S0144: 1,<br>S0422: 1, L0763: 1,<br>L0638: 1, L0773: 1,<br>L0648: 1, L0649: 1, |  |  |  |  |  |
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|---------|---------|-----|------------|------|---|---|--|--|--|
|         |         |     |            |      |   | L5568: 1, L0804: 1,<br>L0775: 1, L0375: 1,<br>L0806: 1, L0653: 1,<br>L0783: 1, L0384: 1,<br>L0787: 1, L0665: 1,<br>H0520: 1, S0126: 1,<br>H0689: 1, H0684: 1,<br>H0658: 1, H0660: 1,<br>H0710: 1, H0696: 1,<br>H0134: 1, H0631: 1,<br>S0028: 1, S0032: 1,<br>L0439: 1, L0754: 1,<br>L0749: 1, L0779: 1,<br>L0758: 1, S0031: 1,<br>L0361: 1, H0542: 1,<br>H0423: 1 and H0008: 1. |  |  |  |
| HVCBC44 | 1044635 | 706 | 3 - 896    | 2881 | Ala-1 to Gln-8,<br>Lys-18 to Arg-23,<br>Lys-56 to Val-64,<br>Lys-129 to Ala-140,<br>Pro-149 to Asn-155. | H0666: 70, L0766: 3,<br>L0665: 3, H0596: 2,<br>L0794: 2, L0747: 2,<br>H0624: 1, H0656: 1,<br>L0717: 1, H0013: 1,<br>H0318: 1, H0169: 1,<br>L0643: 1, L0645: 1,<br>L0764: 1, L0804: 1,<br>L0657: 1, H0660: 1,<br>L0757: 1, L0588: 1,<br>L0592: 1, L0595: 1 and<br>L0601: 1.  |  |  |  |
| HPIAC22 | 1044711 | 707 | 701 - 1741 | 2882 |   | L0745: 23, L0770: 2,<br>S0150: 1, L0761: 1,   |  |  |  |



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|         |         |     |           |      |   |  | L0788: 1, H0520: 1,<br>L0746: 1, L0747: 1,<br>L0758: 1 and L0759: 1.  |  |  |  |
| HSODA53 | 1044741 | 708 | 855 - 995 | 2883 |   |  | AR055: 11, AR060: 6,<br>AR033: 5, AR052: 4,<br>AR061: 4, AR104: 4,<br>AR096: 4, AR089: 4,<br>AR039: 3, AR053: 3<br>H0328: 2, H0124: 2,<br>L0766: 2, H0171: 1,<br>L0005: 1, S0360: 1,<br>H0329: 1, H0615: 1,<br>H0477: 1, S0440: 1,<br>L0598: 1, H0547: 1,<br>S0126: 1, S0168: 1 and<br>H0595: 1.                    |  |  |  |
| HE9ML74 | 1044760 | 709 | 3 - 959   | 2884 | Asp-8 to Asp-20,<br>Phe-43 to Arg-52,<br>Ser-102 to Asp-107,<br>His-109 to Asp-124,<br>Phe-131 to Lys-136,<br>Pro-143 to Pro-149,<br>Lys-189 to Leu-200,<br>Asn-305 to Trp-310. |  | AR033: 5, AR060: 4,<br>AR096: 4, AR089: 2,<br>AR053: 1, AR061: 1,<br>AR052: 1, AR055: 0,<br>AR104: 0<br>L0803: 9, L0758: 7,<br>L0439: 6, L0740: 5,<br>L0766: 4, L0666: 4,<br>L0663: 4, L0754: 4,<br>L0747: 4, L0804: 3,<br>H0144: 3, L0750: 3,<br>L0756: 3, L0752: 3,<br>L0600: 3, S0003: 2,<br>L0455: 2, S0366: 2, |  |  |  |



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|---------|---------|-----|-----------|------|--|---|------|--|--|
| HPDRB76 | 1044762 | 710 | 145 - 855 | 2885 | Glu-14 to Gly-20,<br>Gly-30 to Ala-37,<br>Glu-121 to Leu-127,<br>Lys-152 to Tyr-157,<br>Glu-159 to Thr-173,<br>Leu-177 to Lys-186. | H0651: 1, S0013: 1,<br>H0696: 1, H0436: 1,<br>L0779: 1, L0608: 1,<br>S0446: 1 and H0506: 1.<br>L0747: 8, S0358: 6,<br>L0766: 5, L0774: 5,<br>L0750: 5, L0666: 4,<br>S0406: 4, L0731: 4,<br>H0341: 3, H0696: 3,<br>L0748: 3, L0758: 3,<br>H0650: 2, S0356: 2,<br>S0410: 2, L0717: 2,<br>H0014: 2, L0667: 2,<br>L0768: 2, L0775: 2,<br>L0659: 2, L0783: 2,<br>H0659: 2, H0648: 2,<br>S0330: 2, H0539: 2,<br>L0742: 2, L0439: 2,<br>L0745: 2, L0757: 2,<br>L0759: 2, L0592: 2,<br>L0599: 2, L0595: 2,<br>H0657: 1, S0212: 1,<br>H0662: 1, H0125: 1,<br>S0420: 1, S0354: 1,<br>S0444: 1, S0132: 1,<br>S0476: 1, H0370: 1,<br>L0181: 1, H0069: 1,<br>H0427: 1, L0021: 1,<br>H0575: 1, H0318: 1,<br>S0214: 1, H0039: 1, | 1p34 | 130500,<br>133200,<br>138140,<br>168360,<br>171760,<br>171760,<br>176100,<br>176100,<br>178300,<br>230000,<br>255800 |  |
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| HSYDI55 | 1044769 | 711 | 231 - 1070 | 2886 | Thr-52 to Glu-63,<br>Lys-108 to Asn-118,<br>Gly-148 to Ile-154,<br>Glu-178 to Thr-183,<br>Ala-185 to Arg-195,<br>Lys-202 to Lys-207,<br>Lys-209 to Arg-222,<br>Ser-226 to Glu-233. | H0622: 1, L0483: 1,<br>H0135: 1, H0616: 1,<br>H0477: 1, H0412: 1,<br>S0014: 1, H0561: 1,<br>L0065: 1, S0440: 1,<br>H0633: 1, L0763: 1,<br>L0761: 1, L0772: 1,<br>L0764: 1, L0381: 1,<br>L0653: 1, L0776: 1,<br>L0657: 1, L0383: 1,<br>L0647: 1, L0664: 1,<br>L0665: 1, H0144: 1,<br>H0723: 1, H0658: 1,<br>H0660: 1, H0627: 1,<br>S0027: 1, L0744: 1,<br>L0753: 1, L0755: 1,<br>L0593: 1 and L0594: 1.<br>AR052: 16, AR053: 9,<br>AR033: 5, AR089: 4,<br>AR096: 3, AR060: 3,<br>AR104: 2, AR055: 2,<br>AR039: 1, AR061: 1<br>H0651: 11, L0794: 8,<br>H0038: 5, L0805: 4,<br>L0758: 4, S0358: 3,<br>S0476: 3, L0766: 3,<br>L0803: 3, L0665: 3,<br>H0144: 3, H0521: 3,<br>L0748: 3, L0740: 3,<br>L0756: 3, H0222: 2. |  |  |
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|---------|---------|-----|----------|------|--|--|--|--|--|--|
|         |         |     |          |      |  |  | S0027: 1, L0439: 1,<br>L0749: 1, L0779: 1,<br>L0777: 1, L0731: 1,<br>L0757: 1, H0444: 1,<br>H0445: 1, S0026: 1,<br>S0242: 1, S0194: 1 and<br>H0423: 1.   |  |  |  |
| HOGCI31 | 1044821 | 712 | 49 - 558 | 2887 |  |  | H0435: 1 and S0424: 1.   |  |  |  |
| HNOKX86 | 1044893 | 713 | 69 - 575 | 2888 |  |  | L0740: 20, L0754: 14,<br>L0742: 9, L0771: 7,<br>L0748: 7, L0749: 7,<br>L0752: 6, S0422: 5,<br>L0770: 5, H0585: 4,<br>S0360: 4, H0581: 4,<br>L0769: 4, L0775: 4,<br>S0374: 4, H0521: 4,<br>L0747: 4, L0779: 4,<br>L0753: 4, L0758: 4,<br>H0295: 3, S0278: 3,<br>S0440: 3, S0002: 3,<br>L0649: 3, L0806: 3,<br>S0126: 3, S0380: 3,<br>S0434: 3, S0436: 3,<br>S0026: 3, H0170: 2,<br>H0661: 2, S0358: 2,<br>S0045: 2, H0370: 2,<br>H0442: 2, H0318: 2,<br>S0474: 2, H0687: 2,<br>S0003: 2, H0551: 2,<br>S0438: 2, H0509: 2, |  |  |  |



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|  |  |  |  | S0344: 2, L0764: 2,<br>L0662: 2, L0766: 2,<br>L0776: 2, L0659: 2,<br>H0659: 2, S3014: 2,<br>S0027: 2, L0751: 2,<br>L0756: 2, L0755: 2,<br>L0731: 2, L0588: 2,<br>L0599: 2, H0422: 2,<br>H0265: 1, H0556: 1,<br>S0040: 1, H0294: 1,<br>S0218: 1, H0656: 1,<br>S0116: 1, H0341: 1,<br>S0212: 1, S0418: 1,<br>S0356: 1, S0354: 1,<br>S0376: 1, H0580: 1,<br>H0728: 1, H0733: 1,<br>H0639: 1, H0441: 1,<br>H0431: 1, H0537: 1,<br>H0330: 1, H0013: 1,<br>H0052: 1, H0309: 1,<br>H0231: 1, H0530: 1,<br>H0544: 1, H0046: 1,<br>H0009: 1, H0123: 1,<br>S0388: 1, S0051: 1,<br>H0355: 1, H0266: 1,<br>H0615: 1, H0622: 1,<br>H0644: 1, H0674: 1,<br>H0124: 1, H0316: 1,<br>H0135: 1, H0038: 1,<br>H0372: 1, H0366: 1, |  |  |  |  |
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|---------|---------|-----|------------|------|-------------------|---|--|--|--|
| HTPHG81 | 1045117 | 714 | 2112 - 577 | 2889 | Thr-19 to Ala-26. | S0150: 1, H0646: 1,<br>S0144: 1, S0142: 1,<br>H0529: 1, L0762: 1,<br>L0763: 1, L0371: 1,<br>L0796: 1, L0637: 1,<br>L0521: 1, L0768: 1,<br>L0805: 1, L0655: 1,<br>L0515: 1, L0526: 1,<br>L0809: 1, L0528: 1,<br>L0788: 1, L0792: 1,<br>L0666: 1, L0663: 1,<br>L0665: 1, H0144: 1,<br>L0438: 1, H0690: 1,<br>H0683: 1, H0684: 1,<br>H0670: 1, S0330: 1,<br>S0152: 1, H0704: 1,<br>H0134: 1, S0406: 1,<br>H0478: 1, H0727: 1,<br>S0206: 1, L0591: 1,<br>H0136: 1, H0216: 1,<br>S0196: 1, H0542: 1,<br>H0543: 1, H0423: 1,<br>L0697: 1, S0424: 1 and<br>S0384: 1. |  |  |  |
|         |         |     |            |      |                   | AR039: 19, AR053:<br>13, AR096: 10, AR052:<br>9, AR055: 9, AR033:<br>9, AR089: 8, AR104:<br>7, AR060: 7, AR061:<br>6  |  |  |  |



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| HPCTV49 | 1045379 | 715 | 34 - 444 | 2890 | Ser-21 to Pro-28,<br>Pro-36 to Ser-63,<br>Gln-67 to Thr-83,<br>Arg-88 to Thr-94,<br>Pro-106 to Lys-111,<br>Gly-125 to Gly-132. | H0553: 2, S0282: 1,<br>S0049: 1, H0052: 1,<br>H0622: 1, H0040: 1 and<br>S0406: 1.<br><br>S0358: 17, S0360: 7,<br>L0604: 7, L0769: 5,<br>L0497: 5, L0655: 5,<br>L0590: 4, H0543: 4,<br>L0622: 3, L0499: 3,<br>L0775: 3, H0659: 3,<br>H0670: 3, L0757: 3,<br>L0588: 3, L0601: 3,<br>S0276: 3, S0114: 2,<br>H0657: 2, S0007: 2,<br>H0586: 2, T0109: 2,<br>T0048: 2, H0327: 2,<br>L0471: 2, H0494: 2,<br>L0770: 2, L0662: 2,<br>L0527: 2, L0513: 2,<br>L0530: 2, H0144: 2,<br>H0689: 2, H0672: 2,<br>H0521: 2, L0750: 2,<br>L0755: 2, L0731: 2,<br>L0596: 2, L0599: 2,<br>L0608: 2, L0440: 1,<br>T0049: 1, H0341: 1,<br>H0483: 1, H0125: 1,<br>H0580: 1, S0045: 1,<br>H0351: 1, H0411: 1,<br>S0222: 1, L0623: 1, |  |
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|         |         |     |                |      |   |  |         |   |  |
|---------|---------|-----|----------------|------|---|--|---------|---|--|
| HHGDK68 | 1045464 | 716 | 121 - 999      | 2891 | Arg-128 to Asp-133,<br>Lys-155 to Gln-164,<br>Tyr-168 to Leu-174,<br>Glu-190 to Leu-197,<br>Pro-213 to Arg-224,<br>Met-226 to Ser-241,<br>Pro-247 to Ser-255. | L0361: 1, S0026: 1,<br>H0667: 1 and H0542: 1.  | 22q13.1 | 103050,<br>103050,<br>124030,<br>124030,<br>138981,<br>182380,<br>188826,<br>190040,<br>190040,<br>190040 |  |
|         |         |     |                |      |   |  |         |   |  |
| HNOKM38 | 1045500 | 717 | 5155 -<br>3530 | 2892 | Gln-12 to His-23.   | L0731: 21, L0747: 17,<br>L0776: 16, L0748: 14,<br>L0777: 14, L0752: 13,<br>L0755: 13, L0769: 11,<br>L0750: 11, L0766: 10,<br>L0806: 8, L0770: 7,<br>H0556: 5, L0599: 5,<br>L0774: 4, L0756: 4,<br>L0779: 4, L0753: 4,<br>H0341: 3, L0761: 3,<br>L0764: 3, L0771: 3,<br>L0809: 3, H0144: 3,<br>L0743: 3, L0754: 3,<br>L0757: 3, H0265: 2,<br>S0134: 2, H0306: 2,<br>H0402: 2, H0580: 2,<br>H0393: 2, H0369: 2,<br>H0441: 2, H0013: 2, |         |   |  |



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|---------------------|--|--|--|--|--|
| H0024: 2, H0051: 2, |  |  |  |  |  |
| H0687: 2, H0031: 2, |  |  |  |  |  |
| H0644: 2, H0135: 2, |  |  |  |  |  |
| L0763: 2, L0662: 2, |  |  |  |  |  |
| L0768: 2, L0794: 2, |  |  |  |  |  |
| L0803: 2, L0775: 2, |  |  |  |  |  |
| L0783: 2, H0521: 2, |  |  |  |  |  |
| L0759: 2, L0587: 2, |  |  |  |  |  |
| L0591: 2, L0603: 2, |  |  |  |  |  |
| S0114: 1, S0218: 1, |  |  |  |  |  |
| H0483: 1, H0254: 1, |  |  |  |  |  |
| H0663: 1, S0046: 1, |  |  |  |  |  |
| H0440: 1, H0411: 1, |  |  |  |  |  |
| H0550: 1, H0370: 1, |  |  |  |  |  |
| H0333: 1, H0574: 1, |  |  |  |  |  |
| T0039: 1, H0036: 1, |  |  |  |  |  |
| H0545: 1, H0150: 1, |  |  |  |  |  |
| H0083: 1, H0399: 1, |  |  |  |  |  |
| H0355: 1, H0179: 1, |  |  |  |  |  |
| H0271: 1, H0615: 1, |  |  |  |  |  |
| H0622: 1, T0006: 1, |  |  |  |  |  |
| H0553: 1, H0166: 1, |  |  |  |  |  |
| H0169: 1, H0674: 1, |  |  |  |  |  |
| L0456: 1, S0036: 1, |  |  |  |  |  |
| H0040: 1, H0634: 1, |  |  |  |  |  |
| H0100: 1, H0560: 1, |  |  |  |  |  |
| H0633: 1, H0695: 1, |  |  |  |  |  |
| L0762: 1, L0640: 1, |  |  |  |  |  |
| L0796: 1, L0641: 1, |  |  |  |  |  |
| L0648: 1, L0767: 1, |  |  |  |  |  |



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|---------|---------|-----|----------------|------|---|--|--|--|
| HHFUN47 | 1045842 | 718 | 4701 -<br>2335 | 2893 | Glu-98 to Asp-109,<br>Ser-121 to Ile-128. | L0805: 1, L0606: 1,<br>L0657: 1, L0659: 1,<br>L0528: 1, L0532: 1,<br>L0664: 1, L0665: 1,<br>S0330: 1, S0027: 1,<br>L0740: 1, L0745: 1,<br>L0749: 1, L0758: 1,<br>H0445: 1, L0608: 1,<br>L0595: 1, L0601: 1,<br>S0242: 1, S0276: 1,<br>H0542: 1, H0543: 1,<br>H0423: 1, H0506: 1 and<br>L0600: 1.   |  |  |
|         |         |     |                |      |   | L0748: 13, L0754: 5,<br>L0746: 5, S0356: 4,<br>H0052: 4, L0803: 4,<br>L0745: 4, L0749: 4,<br>L0731: 4, S0360: 3,<br>H0032: 3, H0646: 3,<br>L0766: 3, L0438: 3,<br>L0439: 3, L0740: 3,<br>L0777: 3, S0222: 2,<br>H0581: 2, H0014: 2,<br>S0003: 2, H0591: 2,<br>L0775: 2, L0664: 2,<br>H0435: 2, L0743: 2,<br>L0485: 2, H0542: 2,<br>H0543: 2, L0600: 2,<br>S6024: 1, S0376: 1,<br>H0331: 1, S0414: 1, |  |  |



|         |         |     |         |      |   |   |          |  |
|---------|---------|-----|---------|------|---|---|----------|--|
| HNTSV18 | 1045995 | 719 | 1 - 504 | 2894 | Ala-3 to Gly-19,<br>Arg-29 to Gly-34,<br>Gly-41 to Pro-51,<br>Tyr-90 to Gly-102,<br>Pro-119 to Trp-124. | H0492: 1, H0486: 1,<br>T0082: 1, H0004: 1,<br>S0010: 1, H0242: 1,<br>L0471: 1, H0510: 1,<br>H0039: 1, H0622: 1,<br>H0553: 1, H0090: 1,<br>H0038: 1, H0040: 1,<br>H0616: 1, H0059: 1,<br>H0654: 1, H0538: 1,<br>S0426: 1, L0637: 1,<br>L0761: 1, L0667: 1,<br>L0794: 1, L0560: 1,<br>L0804: 1, L0776: 1,<br>L0666: 1, H0144: 1,<br>S0374: 1, H0519: 1,<br>H0593: 1, S0122: 1,<br>H0684: 1, H0666: 1,<br>S0330: 1, H0539: 1,<br>S0152: 1, H0521: 1,<br>H0522: 1, L0747: 1,<br>L0779: 1, L0758: 1,<br>L0590: 1, L0591: 1,<br>S0192: 1, S0194: 1 and<br>H0422: 1. | 7q21-q22 | 116860,<br>126650,<br>126650,<br>129900,<br>133170,<br>154276. |
|---------|---------|-----|---------|------|---|---|----------|--|



|         |         |     |                |      |  |  |             |                   |   |
|---------|---------|-----|----------------|------|--|--|-------------|-------------------|---|
|         |         |     |                |      |  | S0212: 1, S0046: 1,<br>H0587: 1, H0024: 1,<br>S0036: 1, H0652: 1,<br>L0649: 1, H0547: 1,<br>H0658: 1 and L0439: 1.   |             |                   | 173360,<br>173360,<br>602136,<br>602136,<br>602136,<br>602447 |
| HWHGU08 | 1046137 | 720 | 2564 -<br>1749 | 2895 | Ala-43 to Thr-51,<br>Gly-104 to Arg-112. | S0412: 19, L0803: 10,<br>S0003: 9, S0414: 6,<br>L0770: 6, L0766: 6,<br>L0663: 6, L0754: 6,<br>S0406: 5, L0752: 5,<br>S0222: 4, L0771: 4,<br>H0144: 4, L0439: 4,<br>L0731: 4, S0444: 3,<br>L0717: 3, H0328: 3,<br>L0662: 3, L0655: 3,<br>S0330: 3, H0521: 3,<br>L0748: 3, L0759: 3,<br>H0556: 2, S0356: 2,<br>S0354: 2, H0676: 2,<br>S0408: 2, H0013: 2,<br>H0575: 2, H0050: 2,<br>H0266: 2, S0214: 2,<br>H0428: 2, H0031: 2,<br>H0674: 2, T0067: 2,<br>L0764: 2, L0806: 2,<br>L0805: 2, L0809: 2,<br>L0666: 2, L0664: 2,<br>L0665: 2, H0547: 2,<br>H0435: 2, H0659: 2, | 10p11.2-p12 | 600964,<br>602026 |   |



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|  | H0670: 2, H0660: 2,<br>H0539: 2, S0028: 2,<br>L0779: 2, L0777: 2,<br>L0780: 2, L0588: 2,<br>L0595: 2, H0423: 2,<br>H0685: 1, S0218: 1,<br>H0650: 1, H0656: 1,<br>H0341: 1, S0001: 1,<br>H0125: 1, S0418: 1,<br>S0420: 1, S0360: 1,<br>S0046: 1, S0278: 1,<br>H0437: 1, H0455: 1,<br>H0586: 1, H0587: 1,<br>H0574: 1, H0486: 1,<br>H0156: 1, S0010: 1,<br>H0196: 1, H0052: 1,<br>T0110: 1, H0597: 1,<br>H0046: 1, H0572: 1,<br>H0123: 1, L0471: 1,<br>H0015: 1, S0362: 1,<br>L0163: 1, S6028: 1,<br>H0687: 1, H0622: 1,<br>T0023: 1, L0483: 1,<br>H0553: 1, H0628: 1,<br>H0032: 1, S0364: 1,<br>H0708: 1, H0591: 1,<br>H0040: 1, H0634: 1,<br>H0551: 1, H0412: 1,<br>L0475: 1, S0015: 1,<br>H0625: 1, S0440: 1, |  |
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|---------|---------|-----|-----------|------|---------------------------------------|---|----------|--|
| HE6CR19 | 1046177 | 721 | 870 - 508 | 2896 | Val-3 to Gly-14,<br>Ser-65 to Asn-70. | S0422: 1, S0426: 1,<br>H0529: 1, L0762: 1,<br>L0769: 1, L0796: 1,<br>L0761: 1, L0667: 1,<br>L0772: 1, L0641: 1,<br>L0642: 1, L0643: 1,<br>L0773: 1, L0804: 1,<br>L0775: 1, L0653: 1,<br>L0659: 1, L0783: 1,<br>L0790: 1, T0068: 1,<br>H0519: 1, H0658: 1,<br>H0696: 1, S0206: 1,<br>L0747: 1, L0749: 1,<br>L0755: 1, L0758: 1,<br>H0445: 1, S0436: 1,<br>L0592: 1, H0668: 1,<br>S0026: 1, H0653: 1,<br>H0667: 1, H0136: 1,<br>H0542: 1, S0424: 1 and<br>S0446: 1. | 2p22-p21 | 120435,<br>120435,<br>126600,<br>135300,<br>136435,<br>152790,<br>152790,<br>157170,<br>182601,<br>278300, |
|         |         |     |           |      |                                       | AR089: 30, AR060:<br>18, AR039: 17, AR033:<br>16, AR096: 16, AR104:<br>13, AR055: 12, AR052:<br>12, AR053: 8, AR061:<br>8<br>L0731: 13, L0748: 11,<br>L0747: 10, L0740: 6,<br>L0763: 5, L0750: 5,<br>L0770: 4, L0766: 4,  |          |  |



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|--|--|--|--|--|--|--|--|------------------------------|
|  |  |  |  |  |  | L0555: 4, L0776: 4,<br>S0358: 3, H0100: 3,<br>S0440: 3, L0375: 3,<br>L0664: 3, L0665: 3,<br>L0756: 3, L0752: 3,<br>T0049: 2, S0442: 2,<br>S0045: 2, L0471: 2,<br>T0006: 2, H0413: 2,<br>L0769: 2, L0774: 2,<br>L0775: 2, L0655: 2,<br>L0659: 2, L0382: 2,<br>L0666: 2, L0663: 2,<br>H0658: 2, S0328: 2,<br>S0406: 2, L0439: 2,<br>L0755: 2, L0588: 2,<br>L0591: 2, L0362: 2,<br>S0116: 1, H0483: 1,<br>S0360: 1, S0132: 1,<br>H0393: 1, S0278: 1,<br>H0586: 1, L0021: 1,<br>H0052: 1, H0251: 1,<br>H0544: 1, H0041: 1,<br>H0266: 1, S0214: 1,<br>T0023: 1, H0641: 1,<br>L0772: 1, L0773: 1,<br>L0662: 1, L0386: 1,<br>L0388: 1, L0652: 1,<br>L0653: 1, L0656: 1,<br>L0526: 1, L0518: 1,<br>L0809: 1, S0126: 1, |  | 601071,<br>601771,<br>602134 |
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|---------|---------|-----|---------|------|--|---|----------|---|
| HE9EJ82 | 1046856 | 722 | 3 - 173 | 2897 | Glu-12 to Phe-17,<br>Ser-44 to Asn-57. | H0659: 1, S0330: 1,<br>S0380: 1, L0602: 1,<br>H0710: 1, S0027: 1,<br>L0753: 1, L0757: 1,<br>L0759: 1, L0480: 1,<br>H0665: 1, S0276: 1,<br>H0422: 1 and S0384: 1.<br>L0747: 7, H0144: 6,<br>L0748: 6, L0758: 6,<br>L0666: 5, L0750: 5,<br>L0755: 5, S0360: 4,<br>L0646: 4, L0375: 4,<br>L0776: 4, S0358: 3,<br>H0013: 3, H0024: 3,<br>H0087: 3, L0761: 3,<br>L0764: 3, L0775: 3,<br>L0513: 3, L0809: 3,<br>L0532: 3, L0565: 3,<br>L0751: 3, L0752: 3,<br>L0731: 3, L0588: 3,<br>H0170: 2, T0049: 2,<br>S0116: 2, H0255: 2,<br>S0420: 2, S0280: 2,<br>L0471: 2, H0620: 2,<br>H0083: 2, L0483: 2,<br>H0617: 2, L0769: 2,<br>L0637: 2, L0643: 2,<br>L0662: 2, L0497: 2,<br>L0774: 2, L0655: 2,<br>L0657: 2, L0783: 2, | 1q21-q23 | 104770,<br>107300,<br>107670,<br>110700,<br>131210,<br>134638,<br>135940,<br>136132,<br>145001,<br>146740,<br>146740,<br>146740,<br>146790,<br>152445,<br>152445,<br>159001,<br>173610,<br>174000,<br>176310, ---<br>179755,<br>182860,<br>182860,<br>182860, |
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|         |         |     |            |      |  |  |   |  |  |   |
|---------|---------|-----|------------|------|--|--|---|--|--|---|
|         |         |     |            |      |  |  | L0806: 1, L0653: 1,<br>L0558: 1, L0659: 1,<br>L0517: 1, L0526: 1,<br>L0384: 1, L0529: 1,<br>L0543: 1, L0647: 1,<br>L0664: 1, L0665: 1,<br>S0428: 1, H0520: 1,<br>H0690: 1, H0684: 1,<br>H0658: 1, H0670: 1,<br>H0672: 1, S0328: 1,<br>S0378: 1, S0380: 1,<br>H0576: 1, L0742: 1,<br>L0744: 1, L0756: 1,<br>L0757: 1, H0445: 1,<br>L0596: 1, L0605: 1,<br>L0593: 1, L0362: 1,<br>H0542: 1, H0543: 1,<br>H0506: 1 and H0352: 1. |  |  |   |
| HRADC23 | 1046980 | 723 | 49 - 339   | 2898 |  |  | S0250: 2 and H0555: 1.  |  |  | 106165,<br>117700,<br>117700,<br>150210,<br>169600,<br>180380,<br>180380,<br>180380,<br>190000,<br>203500,<br>232050, |
| HODHS68 | 1047137 | 724 | 516 - 1220 | 2899 | Thr-26 to Ala-44,<br>Pro-55 to His-71,<br>Ser-76 to Cys-83,<br>Asn-92 to Lys-104,<br>Pro-149 to Tyr-158,<br>Ser-208 to Asp-214,<br>Glu-228 to Tyr-234. | L0748: 40, L0740: 39,<br>L0754: 23, H0556: 19,<br>H0620: 13, L0755: 12,<br>L0731: 12, L0741: 11,<br>S0002: 10, L0766: 10,<br>L0439: 10, H0265: 9, -<br>H0013: 9, H0521: 9,<br>L0747: 9, L0758: 8,<br>H0599: 7, L0794: 7,<br>L0751: 7, L0779: 7,<br>L0777: 7, L0752: 7, | 3q21  |  |  |   |



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| S0358: 6, S0360: 6,<br>H0052: 6, H0271: 6,<br>S0003: 6, S0344: 6,<br>S0426: 6, L0774: 6,<br>S0126: 6, L0757: 6,<br>L0759: 6, S0007: 5,<br>S0010: 5, H0046: 5,<br>H0150: 5, H0615: 5,<br>H0622: 5, H0591: 5,<br>H0040: 5, H0623: 5,<br>S0142: 5, L0770: 5,<br>L0764: 5, L0743: 5,<br>L0601: 5, H0624: 4,<br>H0575: 4, H0545: 4,<br>H0012: 4, S0022: 4,<br>H0644: 4, H0628: 4,<br>H0090: 4, H0038: 4,<br>H0634: 4, T0041: 4,<br>L0769: 4, L0363: 4,<br>L0776: 4, L0518: 4,<br>H0144: 4, S0328: 4,<br>L0744: 4, L0750: 4,<br>L0592: 4, H0661: 3,<br>L0005: 3, H0580: 3,<br>S0278: 3, L0471: 3,<br>H0428: 3, H0039: 3,<br>T0023: 3, H0616: 3,<br>L0598: 3, L0771: 3,<br>L0662: 3, H0658: 3,<br>H0522: 3, L0605: 3, | 276902,<br>600882,<br>601199,<br>601199,<br>601199,<br>601471,<br>601682 |
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|  | L0595: 3, S0026: 3,<br>H0543: 3, H0657: 2,<br>S0116: 2, H0341: 2,<br>S0420: 2, S0354: 2,<br>S0045: 2, H0393: 2,<br>L0717: 2, S0222: 2,<br>H0370: 2, T0039: 2,<br>H0618: 2, H0024: 2,<br>T0010: 2, L0483: 2,<br>H0031: 2, L0142: 2,<br>H0032: 2, T0067: 2,<br>H0268: 2, H0494: 2,<br>H0529: 2, L0775: 2,<br>L0375: 2, L0382: 2,<br>L0809: 2, S0374: 2,<br>L0438: 2, H0547: 2,<br>H0519: 2, H0690: 2,<br>H0660: 2, S0330: 2,<br>S0152: 2, H0134: 2,<br>H0626: 2, S0206: 2,<br>L0786: 2, L0753: 2,<br>L0608: 2, L0593: 2,<br>L0603: 2, S0011: 2,<br>H0668: 2, H0653: 2,<br>S0192: 2, H0422: 2,<br>H0170: 1, T0002: 1,<br>H0716: 1, S6024: 1,<br>S0114: 1, T0049: 1,<br>S0134: 1, H0583: 1,<br>H0638: 1, S0442: 1, |  |
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|  | H0489: 1, S0046: 1,<br>H0619: 1, H0437: 1,<br>H0550: 1, H0441: 1,<br>H0461: 1, H0455: 1,<br>H0438: 1, H0601: 1,<br>S0005: 1, H0333: 1,<br>H0574: 1, H0632: 1,<br>H0486: 1, H0270: 1,<br>H0244: 1, H0069: 1,<br>H0635: 1, S0280: 1,<br>L0021: 1, H0002: 1,<br>L0022: 1, H0042: 1,<br>H0036: 1, H0318: 1,<br>H0581: 1, H0421: 1,<br>S0049: 1, H0251: 1,<br>H0309: 1, T0115: 1,<br>H0597: 1, H0041: 1,<br>T0003: 1, H0051: 1,<br>S0051: 1, H0083: 1,<br>S6028: 1, H0266: 1,<br>H0267: 1, H0288: 1,<br>H0286: 1, S0214: 1,<br>H0252: 1, H0070: 1,<br>H0213: 1, H0553: 1,<br>L0055: 1, H0708: 1,<br>H0598: 1, H0063: 1,<br>H0056: 1, T0069: 1,<br>S0386: 1, H0100: 1,<br>L0564: 1, T0042: 1,<br>S0016: 1, H0561: 1, |  |
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| S0440: 1, H0132: 1,<br>S0150: 1, H0641: 1,<br>H0652: 1, L0369: 1,<br>L0762: 1, L0763: 1,<br>L0638: 1, L0372: 1,<br>L0800: 1, L0648: 1,<br>L0767: 1, L0768: 1,<br>L0561: 1, L0381: 1,<br>L0803: 1, L0804: 1,<br>L0651: 1, L0806: 1,<br>L0527: 1, L0657: 1,<br>L0659: 1, L0526: 1,<br>L0544: 1, L0367: 1,<br>L0789: 1, L0791: 1,<br>L0666: 1, L0664: 1,<br>H0520: 1, H0659: 1,<br>H0670: 1, H0648: 1,<br>H0672: 1, S0380: 1,<br>H0518: 1, S0454: 1,<br>S0013: 1, H0696: 1,<br>S0044: 1, S0406: 1,<br>H0555: 1, H0187: 1,<br>S0392: 1, H0627: 1,<br>H0631: 1, S3012: 1,<br>S0390: 1, S3014: 1,<br>S0027: 1, S0028: 1,<br>L0745: 1, L0756: 1,<br>L0780: 1, S0031: 1,<br>S0260: 1, H0707: 1,<br>S0434: 1, L0596: 1, |  |
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| HOPKT59 | 1047169 | 725 | 275 - 814. | 2900 | Gln-1 to Gln-11,<br>Ala-24 to Asp-33,<br>Pro-81 to Arg-91,<br>Lys-99 to Lys-115,<br>Trp-126 to Arg-142,<br>Asp-162 to Glu-180. | L0588: 1, L0599: 1,<br>L0362: 1, L0361: 1,<br>S0276: 1, H0542: 1,<br>S0384: 1 and H0293: 1.<br><br>H0556: 15, H0090: 12,<br>S0152: 11, H0543: 10,<br>H0553: 9, S0026: 9,<br>H0341: 8, S0358: 8,<br>H0046: 8, S0440: 8,<br>L0659: 8, L0665: 8,<br>L0595: 8, H0657: 7,<br>H0266: 7, H0591: 7,<br>H0529: 7, L0666: 7,<br>L0663: 7, H0144: 7,<br>H0547: 7, H0521: 7,<br>L0756: 7, L0731: 7,<br>S0360: 6, S0476: 6,<br>S0003: 6, H0615: 6,<br>H0644: 6, H0040: 6,<br>H0413: 6, L0662: 6,<br>L0664: 6, L0754: 6,<br>L0752: 6, L0599: 6,<br>L0608: 6, H0624: 5,<br>S0408: 5, T0109: 5,<br>H0013: 5, H0551: 5,<br>H0560: 5, L0803: 5,<br>L0655: 5, H0519: 5,<br>S0126: 5, H0684: 5,<br>L0439: 5, L0759: 5,<br>S0436: 5, H0542: 5, |  |  |
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|  | H0423: 5, H0265: 4,<br>S0420: 4, H0031: 4,<br>H0598: 4, H0038: 4,<br>H0633: 4, L0520: 4,<br>L0770: 4, L0646: 4,<br>L0771: 4, L0649: 4,<br>L0775: 4, H0659: 4,<br>L0779: 4, L0758: 4,<br>H0445: 4, H0422: 4,<br>S0424: 4, H0656: 3,<br>S0132: 3, H0586: 3,<br>H0486: 3, H0327: 3,<br>S0051: 3, H0083: 3,<br>H0687: 3, H0039: 3,<br>L0483: 3, H0169: 3,<br>L0369: 3, L0769: 3,<br>L0657: 3, L0809: 3,<br>L0438: 3, H0520: 3,<br>S0330: 3, H0522: 3,<br>H0665: 3, H0171: 2,<br>H0686: 2, S0040: 2,<br>H0716: 2, H0295: 2,<br>S0134: 2, H0583: 2,<br>H0663: 2, H0402: 2,<br>S0418: 2, L0005: 2,<br>S0442: 2, S0354: 2,<br>S0376: 2, S0046: 2,<br>H0619: 2, H0393: 2,<br>L0717: 2, H0497: 2,<br>H0574: 2, T0114: 2, |  |
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|  | H0427: 2, H0590: 2,<br>H0546: 2, H0012: 2,<br>H0373: 2, H0051: 2,<br>H0428: 2, H0628: 2,<br>H0673: 2, H0124: 2,<br>H0634: 2, H0616: 2,<br>H0488: 2, H0412: 2,<br>H0056: 2, L0564: 2,<br>H0494: 2, H0561: 2,<br>H0509: 2, H0132: 2,<br>H0646: 2, L0640: 2,<br>L0763: 2, L0772: 2,<br>L0373: 2, L0521: 2,<br>L0766: 2, L0804: 2,<br>L0805: 2, L0653: 2,<br>L0790: 2, H0690: 2,<br>S0328: 2, H0539: 2,<br>H0518: 2, H0134: 2,<br>H0631: 2, L0748: 2,<br>L0740: 2, S0031: 2,<br>S0434: 2, L0588: 2,<br>L0485: 2, L0593: 2,<br>L0603: 2, H0713: 1,<br>H0717: 1, S0218: 1,<br>S0116: 1, S0212: 1,<br>H0671: 1, H0664: 1,<br>H0662: 1, H0450: 1,<br>H0125: 1, S0444: 1,<br>T0008: 1, H0580: 1,<br>S0045: 1, H0351: 1, |  |  |  |  |  |
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|  | S0222: 1, H0409: 1,<br>H0592: 1, H0642: 1,<br>H0331: 1, H0632: 1,<br>H0250: 1, H0069: 1,<br>H0635: 1, S0280: 1,<br>H0156: 1, L0021: 1,<br>H0042: 1, H0575: 1,<br>S0474: 1, H0581: 1,<br>H0421: 1, H0052: 1,<br>H0251: 1, H0263: 1,<br>T0103: 1, H0545: 1,<br>H0457: 1, H0041: 1,<br>H0123: 1, H0050: 1,<br>L0471: 1, H0620: 1,<br>H0024: 1, H0057: 1,<br>S0388: 1, H0239: 1,<br>H0375: 1, H0594: 1,<br>S0318: 1, S0316: 1,<br>H0286: 1, S0022: 1,<br>S0214: 1, H0328: 1,<br>H0622: 1, T0023: 1,<br>H0119: 1, L0142: 1,<br>H0032: 1, H0674: 1,<br>S0364: 1, H0376: 1,<br>H0135: 1, H0087: 1,<br>T0067: 1, H0623: 1,<br>H0100: 1, T0041: 1,<br>T0042: 1, H0625: 1,<br>L0065: 1, S0438: 1,<br>H0131: 1, S0150: 1, |  |
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| HMCFFK45 | 1047212 | 726 | 121 - 786 | 2901 | Pro-15 to Leu-21, | S0142: 1, S0422: 1,<br>L0598: 1, L0631: 1,<br>L0638: 1, L0641: 1,<br>L0764: 1, L0773: 1,<br>L0648: 1, L0363: 1,<br>L0767: 1, L0768: 1,<br>L5574: 1, L0381: 1,<br>L0552: 1, L0774: 1,<br>L0375: 1, L0607: 1,<br>L0634: 1, L0782: 1,<br>S0428: 1, S0374: 1,<br>H0593: 1, H0689: 1,<br>H0435: 1, H0660: 1,<br>H0666: 1, H0648: 1,<br>H0672: 1, S0380: 1,<br>H0709: 1, S0013: 1,<br>H0696: 1, H0704: 1,<br>S0174: 1, S0406: 1,<br>H0436: 1, H0576: 1,<br>H0478: 1, S0432: 1,<br>S3012: 1, S0028: 1,<br>L0777: 1, L0755: 1,<br>L0480: 1, L0597: 1,<br>L0589: 1, L0591: 1,<br>L0592: 1, L0594: 1,<br>L0362: 1, L0601: 1,<br>H0668: 1, H0667: 1,<br>H0136: 1, S0194: 1 and<br>H0008: 1. | L0747: 10, L0758: 6,<br>H0008: 1. |
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|  |  |  |  |  | <p>Ser-36 to Ser-41,<br/>Arg-54 to His-63.</p> | <p>L0438: 7, L0748: 7,<br/>L0659: 6, L0759: 6,<br/>L0591: 6, H0617: 5,<br/>L0439: 5, L0779: 5,<br/>L0758: 5, L0596: 5,<br/>H0556: 4, H0618: 4,<br/>H0052: 4, L0770: 4,<br/>L0803: 4, L0789: 4,<br/>S0418: 3, H0013: 3,<br/>H0628: 3, H0494: 3,<br/>L0598: 3, L0769: 3,<br/>L0804: 3, L0509: 3,<br/>L0665: 3, H0659: 3,<br/>H0624: 2, H0265: 2,<br/>H0717: 2, S0442: 2,<br/>S0354: 2, S0358: 2,<br/>L0149: 2, S0046: 2,<br/>S0278: 2, H0559: 2,<br/>S0010: 2, S0049: 2,<br/>L0041: 2, H0050: 2,<br/>H0083: 2, H0328: 2,<br/>UNKWN: 2, H0529: 2,<br/>L0662: 2, L0776: 2,<br/>L0655: 2, H0670: 2,<br/>H0660: 2, S0406: 2,<br/>L0747: 2, L0749: 2,<br/>L0752: 2, L0731: 2,<br/>S0436: 2, L0594: 2,<br/>H0542: 2, H0170: 1,<br/>H0171: 1, H0657: 1,</p> |  |  |
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| L0785: 1, H0384: 1,<br>H0671: 1, H0663: 1,<br>L0534: 1, S0356: 1,<br>S0444: 1, S0408: 1,<br>H0549: 1, S0222: 1,<br>H0643: 1, H0632: 1,<br>S0414: 1, H0257: 1,<br>H0486: 1, T0082: 1,<br>T0048: 1, H0318: 1,<br>S0474: 1, H0194: 1,<br>H0263: 1, H0327: 1,<br>H0544: 1, H0546: 1,<br>H0046: 1, H0057: 1,<br>L0163: 1, H0051: 1,<br>S0051: 1, T0010: 1,<br>H0266: 1, H0188: 1,<br>L0052: 1, H0288: 1,<br>S0003: 1, H0604: 1,<br>H0644: 1, H0068: 1,<br>H0316: 1, S0036: 1,<br>H0040: 1, H0164: 1,<br>H0413: 1, H0059: 1,<br>H0100: 1, L0564: 1,<br>H0625: 1, S0448: 1,<br>S0440: 1, S0150: 1,<br>L0637: 1, L0373: 1,<br>L0800: 1, L0374: 1,<br>L0765: 1, L0771: 1,<br>L0766: 1, L0649: 1,<br>L0378: 1, L0805: 1, |  |
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|         |         |     |            |      |  | L0493: 1, L0783: 1,<br>L0383: 1, L5622: 1,<br>L0368: 1, L0787: 1,<br>L0666: 1, L0663: 1,<br>H0144: 1, S0374: 1,<br>L0565: 1, H0520: 1,<br>H0547: 1, H0658: 1,<br>H0666: 1, H0672: 1,<br>H0651: 1, S0380: 1,<br>L0741: 1, L0754: 1,<br>L0750: 1, L0756: 1,<br>S0031: 1, L0589: 1,<br>L0590: 1, L0485: 1,<br>L0608: 1, L0604: 1,<br>L0593: 1, H0506: 1 and<br>H0352: 1. |  |  |
| HNSME49 | 1047403 | 728 | 1295 - 558 | 2903 | Glu-16 to Gly-28,<br>Glu-73 to Glu-78,<br>Asp-94 to Ser-103,<br>Lys-124 to Asp-129,<br>Gln-149 to Arg-155,<br>Ala-190 to Ser-233,<br>Val-240 to Pro-246. | L0794: 6, H0685: 2,<br>S0356: 2, H0090: 2,<br>H0494: 2, L0766: 2,<br>L0803: 2, L0654: 2,<br>L0665: 2, H0435: 2,<br>L0362: 2, H0556: 1,<br>H0384: 1, H0484: 1,<br>S0418: 1, H0497: 1,<br>H0013: 1, S0010: 1,<br>S0346: 1, S0049: 1,<br>H0545: 1, H0375: 1,<br>H0674: 1, L0455: 1,<br>H0413: 1, L0639: 1,<br>L0800: 1, L0376: 1,  |  |  |



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| HWEAC64 | 1047473 | 729 | 155 - 721 | 2904 | Glu-17 to Val-22,<br>Val-29 to Asn-38,<br>Gly-60 to Val-67,<br>Gln-84 to Glu-93,<br>Lys-106 to Leu-115,<br>Gln-118 to Gln-123,<br>Lys-152 to Val-159. | <p>L0378: 1, L0805: 1,<br/>L0657: 1, L0659: 1,<br/>L0783: 1, L0809: 1,<br/>L0789: 1, L0663: 1,<br/>L0664: 1, S0374: 1,<br/>H0520: 1, S0126: 1,<br/>H0666: 1, H0539: 1,<br/>S0152: 1, S0037: 1,<br/>L0756: 1, L0779: 1,<br/>L0777: 1, L0755: 1,<br/>S0436: 1, L0592: 1 and<br/>H0506: 1.</p> <p>AR104: 1, AR033: 1,<br/>AR089: 1, AR053: 0,<br/>AR096: 0, AR061: 0,<br/>AR039: 0, AR052: 0,<br/>AR060: 0, AR055: 0<br/>H0694: 29, H0703: 13,<br/>H0683: 10, H0717: 7,<br/>H0713: 6, H0542: 6,<br/>H0687: 4, H0656: 3,<br/>H0685: 2, H0716: 2,<br/>H0688: 2, H0695: 2,<br/>S0428: 2, H0689: 2,<br/>H0684: 2, H0521: 2,<br/>H0580: 1, H0601: 1,<br/>H0592: 1, H0708: 1,<br/>S0150: 1, H0699: 1,<br/>H0519: 1, H0709: 1,<br/>H0522: 1, H0555: 1,</p> |  |  |
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| HOCQI51 | 1047483 | 730 | 3 - 1016 | 2905 | Gln-15 to Phe-20,<br>Ser-49 to Tyr-54,<br>Glu-111 to Glu-121,<br>Arg-185 to Asp-190,<br>Phe-206 to Asp-212,<br>Glu-309 to Pro-314. | S0028: 1, H0707: 1 and<br>H0543: 1.<br><br>L0794: 8, H0556: 4,<br>H0046: 4, L0809: 3,<br>L0748: 3, H0341: 2,<br>S0356: 2, S0046: 2,<br>H0100: 2, L0769: 2,<br>L0659: 2, S0328: 2,<br>L0742: 2, H0422: 2,<br>H0265: 1, T0002: 1,<br>S0418: 1, S0420: 1,<br>S0354: 1, S0045: 1,<br>L0717: 1, H0549: 1,<br>S0222: 1, H0586: 1,<br>H0156: 1, T0110: 1,<br>H0150: 1, S0051: 1,<br>H0594: 1, H0266: 1,<br>S0250: 1, H0604: 1,<br>S0364: 1, H0634: 1,<br>H0412: 1, H0494: 1,<br>H0561: 1, H0695: 1,<br>H0529: 1, L0761: 1,<br>L0667: 1, L0772: 1,<br>L0643: 1, L0764: 1,<br>L0771: 1, L0768: 1,<br>L0766: 1, L0803: 1,<br>L0629: 1, L0368: 1,<br>L0788: 1, H0690: 1,<br>H0682: 1, H0660: 1,<br>S0152: 1, S0404: 1, |  |  |
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| HOPKE15 | 1047634 | 731 | 3 - 434 | 2906 | Met-18 to Tyr-45,<br>Arg-56 to Thr-65,<br>Gln-89 to Glu-107,<br>Pro-109 to Ala-132. | L0747: 1, L0755: 1,<br>H0445: 1 and H0542: 1.<br>H0046: 9, L0766: 8,<br>L0731: 4, S0360: 3,<br>S0408: 3, H0529: 3,<br>L0769: 3, L0608: 3,<br>H0543: 3, H0656: 2,<br>H0341: 2, S0046: 2,<br>S0010: 2, H0318: 2,<br>H0616: 2, S0150: 2,<br>S0002: 2, L0803: 2,<br>L0659: 2, S0374: 2,<br>H0684: 2, S0328: 2,<br>L0750: 2, L0752: 2,<br>L0759: 2, H0170: 1,<br>S0134: 1, H0657: 1,<br>H0637: 1, H0580: 1,<br>H0486: 1, T0040: 1,<br>T0109: 1, L0021: 1,<br>H0575: 1, H0581: 1,<br>H0052: 1, H0266: 1,<br>H0188: 1, S0214: 1,<br>H0328: 1, H0615: 1,<br>H0428: 1, H0039: 1,<br>H0553: 1, H0598: 1,<br>H0163: 1, H0591: 1,<br>H0038: 1, H0040: 1,<br>T0067: 1, H0413: 1,<br>S0464: 1, S0440: 1,<br>L0598: 1, L0772: 1, |  |  |
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|---------|---------|-----|------------|------|--|---|--|--|--|
|         |         |     |            |      |  | L0800: 1, L0764: 1,<br>L0773: 1, L0648: 1,<br>L0768: 1, L0774: 1,<br>L0775: 1, L0382: 1,<br>L0792: 1, L0666: 1,<br>H0520: 1, S0126: 1,<br>H0682: 1, H0648: 1,<br>H0539: 1, S0378: 1,<br>S0380: 1, S0152: 1,<br>H0521: 1, H0696: 1,<br>H0214: 1, S0406: 1,<br>S0027: 1, L0751: 1,<br>L0777: 1, L0755: 1,<br>L0758: 1, S0031: 1,<br>L0480: 1, L0596: 1,<br>L0592: 1, H0653: 1,<br>H0667: 1, S0192: 1,<br>H0542: 1 and H0422: 1. |  |  |  |
| HMAEL73 | 1047646 | 732 | 748 - 2463 | 2907 | Pro-41 to Gln-47,<br>Thr-169 to Glu-174,<br>Gly-252 to Glu-259,<br>Pro-343 to Ser-348,<br>Asn-379 to Ala-384,<br>His-425 to Glu-432,<br>Asn-505 to Asn-<br>511,<br>Arg-516 to Phe-522. | L0758: 6, L0731: 4,<br>L0747: 3, S0342: 2,<br>L0769: 2, L0768: 2,<br>L0749: 2, L0615: 1,<br>H0686: 1, H0125: 1,<br>S0418: 1, S0354: 1,<br>S0358: 1, S0360: 1,<br>S0222: 1, H0613: 1,<br>H0004: 1, H0510: 1,<br>S6028: 1, H0615: 1,<br>H0039: 1, H0494: 1,<br>S0144: 1, L0762: 1,  |  |  |  |



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|         |         |     |         |      |  |  |  |  | L0388: 1, L0775: 1,<br>L0789: 1, H0689: 1,<br>H0435: 1, H0648: 1,<br>S0152: 1, L0744: 1,<br>L0745: 1, L0755: 1 and<br>H0423: 1.  |  |  |  |
| HNOKE42 | 1047663 | 733 | 2 - 445 | 2908 | Arg-1 to Tyr-7,<br>Arg-17 to Arg-23,<br>Glu-40 to Phe-45,<br>Thr-64 to Tyr-71,<br>Arg-117 to Glu-127,<br>Arg-141 to Ser-148. |  |  |  | H0551: 4, H0494: 4,<br>H0561: 3, H0529: 3,<br>H0521: 3, H0486: 2,<br>L0471: 2, H0373: 2,<br>H0510: 2, H0687: 2,<br>H0553: 2, H0708: 2,<br>H0560: 2, H0509: 2,<br>L0794: 2, L0774: 2,<br>H0547: 2, H0519: 2,<br>H0539: 2, L0439: 2,<br>L0754: 2, L0777: 2,<br>H0685: 1, S0282: 1,<br>S0418: 1, H0637: 1,<br>H0485: 1, H0156: 1,<br>H0530: 1, T0010: 1,<br>S6028: 1, T0023: 1,<br>H0212: 1, T0042: 1,<br>L0763: 1, L0637: 1,<br>L0768: 1, L0805: 1,<br>L0530: 1, L0787: 1,<br>S0148: 1, H0435: 1,<br>H0670: 1, H0660: 1,<br>H0710: 1, H0518: 1,<br>H0522: 1, H0704: 1, |  |  |  |



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|         |         |     |           |      |  |  | S0176: 1, L0748: 1,<br>L0749: 1, L0731: 1 and<br>L0758: 1.   |  |         |   |
| HOFAE31 | 1047670 | 734 | 2 - 220   | 2909 |  |  | Glu-1 to Leu-8,<br>Arg-38 to Cys-49.   |  |         |   |
| HCLCX62 | 1047716 | 735 | 129 - 437 | 2910 |  |  | Ala-1 to Leu-7,<br>Ser-18 to Lys-23.   |  |         |   |
|         |         |     |           |      |  |  | S0136: 25, L0665: 4,<br>S0001: 1, H0662: 1,<br>H0632: 1, H0594: 1,<br>H0188: 1, H0598: 1,<br>H0379: 1, S0294: 1,<br>L0764: 1, L0521: 1,<br>L0803: 1, L0805: 1,<br>L0493: 1, L0514: 1,<br>L0515: 1, L0659: 1,<br>H0689: 1, H0683: 1,<br>H0670: 1, H0672: 1,<br>S0328: 1, H0539: 1,<br>H0478: 1, L0777: 1,<br>L0731: 1 and L0599: 1. |  |         |   |
| HNOAC93 | 1047820 | 736 | 826 - 554 | 2911 |  |  | Pro-12 to Pro-20,<br>Leu-24 to Ser-31,<br>Pro-34 to Pro-82,<br>Arg-84 to Pro-91.   |  | 16p13.3 | 141750,<br>141800,<br>141800,<br>141800,<br>141800,<br>141850,<br>141850,<br>141850,<br>141850,<br>141850,<br>156850, |
|         |         |     |           |      |  |  | AR053: 18, AR089:<br>16, AR096: 15, AR033:<br>14, AR039: 12, AR060:<br>11, AR104: 11, AR055:<br>10, AR061: 6<br>H0251: 6, H0412: 2,<br>H0295: 1, S0114: 1,<br>H0657: 1, H0255: 1,<br>H0663: 1, H0619: 1,<br>S0222: 1, H0392: 1,<br>H0333: 1, H0486: 1,   |  |         |   |



|         |         |     |         |      |  |  |   |   |
|---------|---------|-----|---------|------|--|--|---|---|
| HMEJA45 | 1047848 | 737 | 1 - 399 | 2912 | Phe-4 to Arg-11,<br>Ala-16 to Ser-22,<br>Cys-31 to Cys-39. | H0635: 1, H0318: 1,<br>H0050: 1, H0051: 1,<br>S0388: 1, S0051: 1,<br>H0239: 1, H0688: 1,<br>H0644: 1, H0181: 1,<br>H0617: 1, H0606: 1,<br>S0438: 1, L0769: 1,<br>L0761: 1, L0803: 1,<br>H0547: 1, S0126: 1,<br>H0658: 1, H0672: 1,<br>H0651: 1, S0404: 1,<br>S0406: 1, H0436: 1,<br>L0748: 1, L0751: 1 and<br>S0276: 1.  | H0635: 1, H0318: 1,<br>H0050: 1, H0051: 1,<br>S0388: 1, S0051: 1,<br>H0239: 1, H0688: 1,<br>H0644: 1, H0181: 1,<br>H0617: 1, H0606: 1,<br>S0438: 1, L0769: 1,<br>L0761: 1, L0803: 1,<br>H0547: 1, S0126: 1,<br>H0658: 1, H0672: 1,<br>H0651: 1, S0404: 1,<br>S0406: 1, H0436: 1,<br>L0748: 1, L0751: 1 and<br>S0276: 1. | 186580,<br>191092,<br>600140,<br>600273,<br>601313,<br>601785 |
|         |         |     |         |      |  | AR060: 5, AR061: 3,<br>AR104: 3, AR089: 3,<br>AR096: 2, AR055: 2<br>S0206: 5, H0413: 3,<br>S0028: 3, H0170: 2,<br>S0212: 2, H0546: 2,<br>H0266: 2, H0171: 1,<br>S0040: 1, H0580: 1,<br>H0208: 1, H0411: 1,<br>H0437: 1, H0453: 1,<br>H0427: 1, H0051: 1,<br>S0051: 1, H0355: 1,<br>S0003: 1, H0031: 1,<br>H0412: 1, S0188: 1,<br>S0390: 1, S3014: 1,<br>S0027: 1 and S0031: 1. |   |   |



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|---------|---------|-----|-----------|------|--|---|--|--|
| HLDAS11 | 1047937 | 738 | 224 - 958 | 2913 | Asn-33 to Glu-41,<br>Ala-58 to Ser-69,<br>Ser-77 to Pro-84,<br>Pro-97 to Pro-102,<br>Ile-121 to Gln-128. | H0693: 636, H0637:<br>29, H0551: 16, L0748:<br>11, L0777: 7, H0069: 5,<br>L0666: 4, L0157: 3,<br>H0641: 3, L0766: 3,<br>L0665: 3, L0758: 3,<br>H0510: 2, H0615: 2,<br>H0509: 2, L0663: 2,<br>H0521: 2, L0751: 2,<br>L0755: 2, H0542: 2,<br>H0650: 1, H0657: 1,<br>S0356: 1, S0376: 1,<br>S0360: 1, H0431: 1,<br>H0013: 1, H0618: 1,<br>S0010: 1, H0581: 1,<br>T0001: 1, H0052: 1,<br>H0251: 1, H0596: 1,<br>H0373: 1, H0083: 1,<br>H0271: 1, S0250: 1,<br>S0003: 1, S0214: 1,<br>H0622: 1, H0553: 1,<br>H0674: 1, H0038: 1,<br>H0040: 1, H0272: 1,<br>H0059: 1, T0041: 1,<br>H0646: 1, L0598: 1,<br>L0662: 1, L0768: 1,<br>L0649: 1, L0774: 1,<br>L0805: 1, L0776: 1,<br>L0657: 1, L0517: 1,<br>L0382: 1, L0791: 1, |  |  |
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|---------|---------|-----|------------|------|---|---|--------|--|
| HWMJB31 | 1048009 | 739 | 202 - 732  | 2914 | Ile-1 to Thr-7,<br>Glu-16 to Glu-33,<br>Leu-37 to Ala-46,<br>Leu-69 to Glu-80,<br>Tyr-89 to Gln-111,<br>Ser-121 to Cys-128,<br>Pro-135 to Glu-156,<br>Glu-162 to Thr-177. | H0144: 1, S0126: 1,<br>H0690: 1, H0658: 1,<br>H0648: 1, S0152: 1,<br>S0146: 1, L0743: 1,<br>L0439: 1, L0754: 1,<br>L0749: 1, S0260: 1 and<br>L0366: 1.<br><br>S0358: 1  |        |  |
| HAZAA31 | 1048188 | 740 | 1480 - 185 | 2915 |   | L0593: 16, L0591: 12,<br>H0543: 9, L0667: 8,<br>L0751: 8, H0581: 7,<br>H0457: 7, H0617: 7,<br>L0659: 7, S0418: 6,<br>S0046: 6, H0494: 6,<br>S0206: 6, S0116: 5,<br>H0341: 5, H0402: 5,<br>S0222: 5, H0271: 5,<br>L0766: 5, H0521: 5,<br>S0027: 5, L0740: 5,<br>L0749: 5, L0595: 5,<br>S0360: 4, H0486: 4,<br>S0280: 4, H0024: 4,<br>H0551: 4, L0372: 4, | 3p14.3 | 150250,<br>164500,<br>277730,<br>600971,<br>601226 |



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|  | L0666: 4, H0519: 4,<br>H0542: 4, H0656: 3,<br>S0420: 3, S0356: 3,<br>S0045: 3, H0052: 3,<br>H0545: 3, H0050: 3,<br>H0620: 3, S0051: 3,<br>H0553: 3, H0135: 3,<br>T0042: 3, L0475: 3,<br>S0344: 3, L0769: 3,<br>L0654: 3, L0663: 3,<br>H0520: 3, S3014: 3,<br>L0439: 3, L0777: 3,<br>S0192: 3, S0424: 3,<br>H0265: 2, H0556: 2,<br>S0040: 2, H0657: 2,<br>H0484: 2, S0376: 2,<br>H0580: 2, S0007: 2,<br>H0333: 2, H0575: 2,<br>T0048: 2, H0421: 2,<br>S0049: 2, H0046: 2,<br>L0041: 2, H0266: 2,<br>H0615: 2, L0483: 2,<br>H0087: 2, H0413: 2,<br>H0059: 2, H0561: 2,<br>H0509: 2, L0771: 2,<br>L0649: 2, L0775: 2,<br>L0375: 2, L0809: 2,<br>L0665: 2, H0144: 2,<br>L0565: 2, L0438: 2,<br>H0658: 2, H0555: 2, |  |
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| HOCMC83 | 1048300 | 741 | 56 - 1465 | 2916 | Gln-116 to Trp-124, | H0606: 1, L0055: 1,<br>H0124: 1, H0090: 1,<br>H0040: 1, T0067: 1,<br>H0412: 1, H0100: 1,<br>H0560: 1, H0130: 1,<br>H0647: 1, H0646: 1,<br>S0142: 1, S0210: 1,<br>S0002: 1, H0529: 1,<br>L0535: 1, L0770: 1,<br>L0638: 1, L0796: 1,<br>L0637: 1, L0643: 1,<br>L0374: 1, L0764: 1,<br>L0773: 1, L0662: 1,<br>L0768: 1, L0774: 1,<br>L0378: 1, L0658: 1,<br>L0383: 1, L0382: 1,<br>L0791: 1, L0664: 1,<br>S0126: 1, H0689: 1,<br>H0690: 1, H0682: 1,<br>H0435: 1, H0670: 1,<br>H0660: 1, H0666: 1,<br>L0355: 1, S0378: 1,<br>L0602: 1, H0134: 1,<br>H0436: 1, L0750: 1,<br>L0755: 1, S0031: 1,<br>S0436: 1, L0608: 1,<br>S0026: 1, H0653: 1,<br>H0665: 1, H0667: 1,<br>H0217: 1 and H0352: 1. |  |  |
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|---------|---------|-----|----------|------|--|---|--------|--|
| HCFCs40 | 1048427 | 742 | 2 - 1330 | 2917 | Leu-21 to Gly-27,<br>Pro-73 to Leu-83. | L0758: 5, L0766: 4,<br>H0620: 3, H0038: 3,<br>L0794: 3, S0358: 2,<br>H0687: 2, H0135: 2,<br>L0508: 2, L0809: 2,<br>L0787: 2, L0665: 2,<br>H0520: 2, L0439: 2,<br>H0650: 1, H0657: 1,<br>S0222: 1, H0574: 1,<br>H0318: 1, H0581: 1,<br>S0049: 1, H0545: 1,<br>H0566: 1, H0622: 1,<br>H0033: 1, H0181: 1,<br>H0617: 1, H0165: 1,<br>H0264: 1, H0059: 1,<br>L0564: 1, H0561: 1,<br>S0150: 1, H0647: 1,<br>L0769: 1, L0644: 1,<br>L0768: 1, L0774: 1,<br>L0375: 1, L0806: 1,<br>L0509: 1, L0514: 1,<br>L0510: 1, L0789: 1,<br>L0438: 1, H0435: 1,<br>H0660: 1, H0648: 1,<br>H0696: 1, H0436: 1,<br>H0627: 1 and L0731: 1. | 3p21.3 | 116806,<br>120120,<br>120120,<br>120120, |
|---------|---------|-----|----------|------|--|---|--------|--|



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| AR052: 62, AR104:<br>48, AR096: 33, AR039:<br>25 | S0474: 21, H0683: 7,<br>L0748: 7, H0251: 6,<br>L0777: 5, S0422: 4,<br>L0764: 4, L0766: 4,<br>L0740: 4, L0754: 4,<br>S0418: 3, H0046: 3,<br>H0553: 3, H0521: 3,<br>L0779: 3, L0752: 3,<br>L0731: 3, L0757: 3,<br>H0422: 3, H0713: 2,<br>H0717: 2, H0733: 2,<br>S0476: 2, H0441: 2,<br>H0575: 2, H0428: 2,<br>H0494: 2, L0659: 2,<br>L0666: 2, H0547: 2,<br>H0519: 2, L0439: 2,<br>L0745: 2, L0749: 2,<br>L0756: 2, L0758: 2,<br>L0485: 2, S0026: 2,<br>S0384: 2, H0716: 1,<br>S0212: 1, H0661: 1,<br>S0356: 1, S0444: 1,<br>S0045: 1, S0046: 1,<br>S0132: 1, H0645: 1,<br>H0406: 1, S6022: 1,<br>H0431: 1, H0587: 1,<br>H0486: 1, T0040: 1, | 120436,<br>120436,<br>120436,<br>138320,<br>168468,<br>182280,<br>600163 |
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| HVCAA65 | 1048595 | 743 | 1042 - 212 | 2918 | Trp-1 to Gly-10,<br>Gly-22 to Gly-29,<br>Leu-82 to Val-88,<br>Ala-116 to His-123,          | H0013: 1, H0069: 1,<br>H0156: 1, H0098: 1,<br>H0581: 1, H0150: 1,<br>H0024: 1, H0083: 1,<br>S0025: 1, H0355: 1,<br>H0328: 1, H0031: 1,<br>H0124: 1, T0067: 1,<br>H0413: 1, H0623: 1,<br>H0560: 1, L0769: 1,<br>L0667: 1, L0372: 1,<br>L0767: 1, L0803: 1,<br>L0804: 1, L0774: 1,<br>L0775: 1, L0375: 1,<br>L0784: 1, L0655: 1,<br>L0657: 1, L0783: 1,<br>L0647: 1, L5622: 1,<br>L5623: 1, L0664: 1,<br>H0697: 1, S0374: 1,<br>H0724: 1, H0520: 1,<br>H0435: 1, H0710: 1,<br>H0518: 1, S0152: 1,<br>L0751: 1, L0759: 1,<br>S0031: 1, H0445: 1,<br>S0434: 1, S0436: 1,<br>S0192: 1, S0424: 1 and<br>L0600: 1. |  |  |
|         |         |     |            |      | S0440: 12, H0543: 11,<br>H0341: 7, L0775: 6,<br>L0591: 6, L0770: 5,<br>L0766: 5, L0750: 5, |   |  |  |



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| Lys-144 to Phe-156,<br>Phe-167 to Thr-181,<br>Glu-202 to Asp-207,<br>Glu-262 to Ser-277. | L0759: 5, L0588: 5,<br>H0542: 5, S0360: 4,<br>S0045: 4, H0486: 4,<br>H0012: 4, S0372: 4,<br>S0144: 4, L0755: 4,<br>L0731: 4, L0758: 4,<br>L0596: 4, S0114: 3,<br>H0657: 3, S0132: 3,<br>H0640: 3, H0545: 3,<br>H0266: 3, H0413: 3,<br>H0494: 3, L0598: 3,<br>H0529: 3, L0521: 3,<br>L0364: 3, L0657: 3,<br>L0783: 3, L0809: 3,<br>L0666: 3, L0665: 3,<br>H0547: 3, H0519: 3,<br>S0126: 3, H0659: 3,<br>H0670: 3, L0777: 3,<br>S0436: 3, L0595: 3,<br>H0395: 2, H0265: 2,<br>T0049: 2, H0484: 2,<br>H0402: 2, H0125: 2,<br>S0418: 2, S0408: 2,<br>S0410: 2, H0580: 2,<br>T0109: 2, H0575: 2,<br>H0581: 2, H0546: 2,<br>H0373: 2, H0510: 2,<br>H0708: 2, H0412: 2,<br>H0396: 2, L0763: 2,<br>L0769: 2, L0774: 2, |  |  |  |  |
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|  | L0805: 2, L0653: 2,<br>L0776: 2, L0655: 2,<br>L0513: 2, L0656: 2,<br>L0558: 2, L0517: 2,<br>H0666: 2, H0672: 2,<br>S0328: 2, S0044: 2,<br>S0406: 2, L0751: 2,<br>L0747: 2, L0757: 2,<br>L0597: 2, L0581: 2,<br>L0599: 2, L0604: 2,<br>S0026: 2, H0653: 2,<br>H0422: 2, H0506: 2,<br>H0556: 1, T0002: 1,<br>H0686: 1, H0295: 1,<br>H0583: 1, H0650: 1,<br>S0298: 1, H0483: 1,<br>H0305: 1, S0420: 1,<br>S0356: 1, H0675: 1,<br>S0046: 1, S6022: 1,<br>H0432: 1, H0392: 1,<br>H0586: 1, H0497: 1,<br>H0333: 1, H0331: 1,<br>H0250: 1, S0280: 1,<br>L0021: 1, H0599: 1,<br>H0042: 1, T0082: 1,<br>S0010: 1, T0048: 1,<br>H0052: 1, H0597: 1,<br>L0738: 1, H0178: 1,<br>H0123: 1, H0081: 1,<br>L0471: 1, H0620: 1, |  |
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|---------|---------|-----|-----------|------|---|---|--|------|--------------------|
| HSPSI76 | 1048635 | 744 | 85 - 1578 | 2919 | Phe-1 to Pro-12,<br>Asp-182 to Pro-188. | H0071: 1, H0355: 1,<br>H0687: 1, S0022: 1,<br>H0039: 1, T0006: 1,<br>H0031: 1, H0628: 1,<br>H0135: 1, H0038: 1,<br>H0087: 1, H0264: 1,<br>T0042: 1, S0016: 1,<br>H0560: 1, H0509: 1,<br>H0633: 1, H0649: 1,<br>S0142: 1, S0344: 1,<br>S0208: 1, S0422: 1,<br>L0520: 1, L0762: 1,<br>L3904: 1, L0667: 1,<br>L0771: 1, L0768: 1,<br>L0381: 1, L0784: 1,<br>L0652: 1, L0559: 1,<br>L0636: 1, L0540: 1,<br>L0518: 1, L0384: 1,<br>S0374: 1, H0723: 1,<br>H0690: 1, H0660: 1,<br>H0648: 1, S0380: 1,<br>S0152: 1, H0521: 1,<br>H0522: 1, H0555: 1,<br>S0392: 1, S0027: 1,<br>S0028: 1, S0206: 1,<br>L0743: 1, L0779: 1,<br>L0780: 1, L0753: 1,<br>H0707: 1 and H0712: 1. | S0250: 4, H0551: 4,<br>S0360: 3, H0013: 3, | 5q31 | 121050,<br>131400, |
|---------|---------|-----|-----------|------|---|---|--|------|--------------------|



|         |         |     |           |      |   |   |          |  |  |
|---------|---------|-----|-----------|------|---|---|----------|--|--|
|         |         |     |           |      | Arg-215 to Tyr-224,<br>Gly-240 to Lys-247,<br>Pro-279 to Gly-286,<br>Leu-295 to Glu-308,<br>Pro-326 to Tyr-331,<br>Thr-343 to Arg-349,<br>Tyr-354 to Ala-360,<br>Lys-369 to Asp-375,<br>Ser-426 to Asp-432. | H0295: 2, H0628: 2,<br>L0776: 2, S3014: 2,<br>L0439: 2, S0212: 1,<br>S0418: 1, S0420: 1,<br>H0734: 1, S0046: 1,<br>S0476: 1, H0497: 1,<br>T0040: 1, H0544: 1,<br>H0545: 1, H0024: 1,<br>S0003: 1, H0644: 1,<br>H0038: 1, H0040: 1,<br>H0413: 1, S0294: 1,<br>H0633: 1, S0144: 1,<br>L0372: 1, L0805: 1,<br>L0654: 1, L5623: 1,<br>L4501: 1, H0144: 1,<br>L0438: 1, S0126: 1,<br>H0683: 1, H0672: 1,<br>H0539: 1, H0521: 1,<br>H0631: 1, S0037: 1,<br>S0434: 1, L0588: 1,<br>L0599: 1, L0601: 1 and<br>H0665: 1. |          |  | 138040,<br>153455,<br>159000,<br>179095,<br>181460,<br>192974,<br>192974,<br>600807,<br>601596,<br>601692,<br>601692,<br>601692,<br>602089,<br>602121,<br>602460 |
| HVVCH35 | 1048658 | 745 | 1107 - 91 | 2920 | Ser-45 to Pro-51.   | L0769: 5, L0759: 4,<br>H0402: 3, S0376: 3,<br>H0424: 3, L0749: 3,<br>S0222: 2, L0535: 2,<br>L0774: 2, L0806: 2,<br>L0384: 2, L0666: 2,<br>H0265: 1, S0218: 1,<br>H0484: 1, S0354: 1,  | 22q13.33 |  |  |



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|---------|---------|-----|---------|------|---|---|--|--|
| HOFNI66 | 1048739 | 746 | 3 - 710 | 2921 | Thr-1 to Asp-9, --<br>Gly-18 to Ser-24,<br>Asn-35 to Arg-42,<br>Trp-49 to Asp-62,<br>Ser-69 to Ala-74,<br>Arg-155 to Trp-167, | S0444: 1, S0360: 1,<br>S0007: 1, H0392: 1,<br>H0559: 1, H0486: 1,<br>T0039: 1, T0060: 1,<br>L0021: 1, H0004: 1,<br>H0581: 1, H0052: 1,<br>H0194: 1, H0204: 1,<br>H0024: 1, H0405: 1,<br>H0617: 1, H0606: 1,<br>H0090: 1, H0272: 1,<br>H0494: 1, S0438: 1,<br>S0422: 1, S0002: 1,<br>L0770: 1, L0772: 1,<br>L0372: 1, L0641: 1,<br>L0645: 1, L0771: 1,<br>L0768: 1, L0794: 1,<br>L0381: 1, L0775: 1,<br>L0789: 1, H0547: 1,<br>H0659: 1, H0658: 1,<br>H0672: 1, H0521: 1,<br>S0406: 1, H0727: 1,<br>L0744: 1, L0779: 1,<br>L0758: 1, H0445: 1,<br>H0423: 1 and H0422: 1. |  |  |
|         |         |     |         |      |   | L0740: 10, L0752: 9;<br>L0748: 8, S0422: 6,<br>S0440: 5, L0666: 5,<br>L0754: 5, S0360: 4,<br>H0327: 4, L0771: 4,<br>L0438: 4, S0126: 4,   |  |  |



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| Leu-173 to Tyr-180,<br>Arg-190 to Ala-197. | S0406: 4, L0779: 4,<br>L0596: 4, S0444: 3,<br>T0109: 3, H0575: 3,<br>S0003: 3, L0805: 3,<br>L0776: 3, L0809: 3,<br>L0664: 3, L0665: 3,<br>S0328: 3, H0696: 3,<br>L0439: 3, L0755: 3,<br>L0731: 3, H0543: 3,<br>H0657: 2, H0662: 2,<br>S0420: 2, S0356: 2,<br>S0358: 2, S0408: 2,<br>S0007: 2, H0415: 2,<br>S0010: 2, H0046: 2,<br>H0014: 2, H0083: 2,<br>H0032: 2, H0674: 2,<br>H0708: 2, H0090: 2,<br>H0038: 2, H0272: 2,<br>H0429: 2, H0494: 2,<br>S0372: 2, S0438: 2,<br>H0509: 2, L0598: 2,<br>L0766: 2, L0649: 2,<br>L0774: 2, L0775: 2,<br>L0543: 2, L5622: 2,<br>L0663: 2, H0144: 2,<br>S0378: 2, L0602: 2,<br>H0522: 2, S0028: 2,<br>L0758: 2, L0588: 2,<br>L0599: 2, S0026: 2,<br>S0424: 2, H0170: 1, |  |  |  |  |  |
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|         |         |     |                |      |  |  |  |   |  |
|---------|---------|-----|----------------|------|--|--|--|---|--|
| HMSKI90 | 1048792 | 747 | 1432 -<br>1770 | 2922 |  |  |  | H0560: 1, H0561: 1,<br>S0352: 1, S0382: 1,<br>S0150: 1, S0344: 1,<br>S0210: 1, L0763: 1,<br>L0769: 1, L0638: 1,<br>L0637: 1, L5565: 1,<br>L0772: 1, L0372: 1,<br>L0800: 1, L0648: 1,<br>L0662: 1, L0767: 1,<br>L0768: 1, L0806: 1,<br>L0655: 1, L0629: 1,<br>L0658: 1, L0517: 1,<br>L0526: 1, L0529: 1,<br>L0532: 1, H0698: 1,<br>H0520: 1, H0547: 1,<br>H0519: 1, H0690: 1,<br>H0682: 1, H0659: 1,<br>H0658: 1, H0670: 1,<br>H0539: 1, S0380: 1,<br>S0152: 1, H0521: 1,<br>H0704: 1, H0478: 1,<br>S3014: 1, S0032: 1,<br>L0749: 1, L0750: 1,<br>L0756: 1, L0757: 1,<br>H0445: 1, S0434: 1,<br>L0608: 1, H0668: 1,<br>S0194: 1 and H0423: 1.<br>AR096: 4, AR089: 4,<br>AR060: 2, AR033: 2,<br>AR104: 2, AR061: 1, |  |
|---------|---------|-----|----------------|------|--|--|--|---|--|



|         |         |     |         |      |  |  |   |  |  |  |
|---------|---------|-----|---------|------|--|--|---|--|--|--|
|         |         |     |         |      |  |  | AR053: 0, AR055: 0,<br>AR039: 0<br>H0171: 1, S0444: 1 and<br>S0002: 1.  |  |  |  |
| HSYBI49 | 1049151 | 748 | 2 - 805 | 2923 |  |  | AR089: 15, AR096:<br>14, AR060: 12, AR039:<br>10, AR104: 8, AR053:<br>8, AR055: 4, AR033:<br>4, AR061: 3, AR052:<br>2<br>L0777: 17, H0521: 11,<br>L0747: 6, L0649: 5,<br>H0586: 4, L0664: 4,<br>L0748: 4, L0749: 4,<br>H0661: 3, S0132: 3,<br>H0587: 3, H0509: 3,<br>L0637: 3, L0662: 3,<br>L0806: 3, L0665: 3,<br>L0779: 3, S0358: 2,<br>L0717: 2, T0040: 2,<br>H0014: 2, H0494: 2,<br>S0438: 2, L0451: 2,<br>H0547: 2, H0435: 2,<br>H0658: 2, H0648: 2,<br>H0672: 2, L0602: 2,<br>S0436: 2, H0543: 2,<br>L0448: 1, S0476: 1,<br>H0431: 1, H0592: 1,<br>T0114: 1, L0021: 1,<br>T0010: 1, H0188: 1, |  |  |  |



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|---------|---------|-----|----------------|------|---|--|--|--|
| HTXSN37 | 1049372 | 749 | 1061 -<br>1864 | 2924 | Thr-34 to Glu-47,<br>Pro-82 to Ser-104,<br>His-120 to Asn-126,<br>His-129 to Pro-152,<br>Cys-214 to Lys-220,<br>Lys-261 to Ser-268. | T0023: 1, L0483: 1,<br>H0551: 1, S0352: 1,<br>H0633: 1, L0763: 1,<br>L0761: 1, L0646: 1,<br>L0648: 1, L4500: 1,<br>L5568: 1, L0774: 1,<br>L0775: 1, L0525: 1,<br>L0653: 1, L0657: 1,<br>H0690: 1, H0684: 1,<br>S0378: 1, H0479: 1,<br>L0754: 1, L0755: 1,<br>L0759: 1, L0362: 1 and<br>S0242: 1.   |  |  |
|         |         |     |                |      |   | S0422: 31, L0748: 16,<br>L0803: 12, H0580: 11,<br>H0615: 10, L0754: 9,<br>L0596: 9, S0360: 8,<br>L0805: 8, L0779: 8,<br>L0663: 7, L0745: 7,<br>S0358: 6, H0271: 6,<br>L0766: 6, L0809: 6,<br>S0406: 6, L0777: 6,<br>S0007: 5, H0046: 5,<br>H0024: 5, L0770: 5,<br>L0761: 5, L0771: 5,<br>L0662: 5, L0657: 5,<br>L0666: 5, H0710: 5,<br>H0436: 5, L0750: 5,<br>H0542: 5, S0444: 4,<br>S0476: 4, H0547: 4, |  |  |



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| S0126: 4, H0648: 4,<br>S0404: 4, S0434: 4,<br>L0599: 4, H0543: 4,<br>H0624: 3, H0224: 3,<br>S0114: 3, S0116: 3,<br>S0442: 3, H0549: 3,<br>H0618: 3, H0620: 3,<br>H0616: 3, H0264: 3,<br>H0494: 3, S0002: 3,<br>L0646: 3, L0764: 3,<br>L0794: 3, L0804: 3,<br>L0776: 3, L0783: 3,<br>L0792: 3, S0374: 3,<br>H0659: 3, H0521: 3,<br>L0747: 3, L0756: 3,<br>L0755: 3, L0758: 3,<br>H0506: 3, H0341: 2,<br>H0619: 2, H0645: 2,<br>H0574: 2, T0060: 2,<br>H0013: 2, H0156: 2,<br>H0599: 2, S0474: 2,<br>H0052: 2, H0251: 2,<br>H0009: 2, S6028: 2,<br>H0028: 2, H0428: 2,<br>H0622: 2, H0553: 2,<br>H0135: 2, H0090: 2,<br>H0038: 2, H0634: 2,<br>L0065: 2, H0509: 2,<br>S0344: 2, S0426: 2,<br>L0769: 2, L0637: 2, |
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|  | H0327: 1, H0544: 1,<br>L0471: 1, H0051: 1,<br>H0179: 1, H0687: 1,<br>S0214: 1, H0252: 1,<br>H0688: 1, H0039: 1,<br>H0031: 1, H0032: 1,<br>H0674: 1, H0124: 1,<br>H0316: 1, H0591: 1,<br>H0040: 1, H0063: 1,<br>H0551: 1, H0059: 1,<br>L0564: 1, T0041: 1,<br>H0560: 1, S0440: 1,<br>S0144: 1, S0142: 1,<br>L0598: 1, H0529: 1,<br>L0520: 1, L0640: 1,<br>L0631: 1, L0638: 1,<br>L0796: 1, L5566: 1,<br>L0667: 1, L0643: 1,<br>L0521: 1, L0767: 1,<br>L5574: 1, L0375: 1,<br>L0523: 1, L0653: 1,<br>L0606: 1, L0807: 1,<br>L0527: 1, L0512: 1,<br>L0659: 1, L0517: 1,<br>L0542: 1, L0382: 1,<br>L0530: 1, L0787: 1,<br>L0789: 1, L0790: 1,<br>L0791: 1, L0664: 1,<br>S0052: 1, H0519: 1,<br>H0593: 1, S0122: 1, |  |
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|---------|---------|-----|----------|------|--|--|--|--|
| HMUBT31 | 1049466 | 750 | 2 - 1429 | 2925 | Lys-45 to Asp-54,<br>Thr-56 to Leu-63,<br>Gln-227 to Thr-241,<br>Glu-287 to Val-292,<br>Gln-331 to Gly-337,<br>Glu-402 to Asp-411,<br>Glu-436 to Cys-441,<br>Glu-454 to Glu-461. | H0684: 1, S0330: 1,<br>H0518: 1, H0522: 1,<br>H0478: 1, S0027: 1,<br>S0028: 1, L0743: 1,<br>L0744: 1, L0439: 1,<br>L0740: 1, L0749: 1,<br>L0786: 1, L0731: 1,<br>L0757: 1, S0260: 1,<br>H0444: 1, H0595: 1,<br>L0584: 1, L0605: 1,<br>L0581: 1, L0362: 1,<br>H0653: 1, H0136: 1,<br>S0192: 1, H0422: 1,<br>S0424: 1, H0008: 1 and<br>H0352: 1.         |  |  |
|         |         |     |          |      |  | L0605: 28, L0754: 9,<br>S0003: 6, L0803: 6,<br>L0777: 5, L0759: 4,<br>L0770: 3, L0663: 3,<br>H0683: 3, L0439: 3,<br>L0756: 3, L0599: 3,<br>S0026: 3, H0171: 2,<br>S0418: 2, H0587: 2,<br>H0050: 2, L0483: 2,<br>H0032: 2, H0591: 2,<br>H0413: 2, L0772: 2,<br>L0768: 2, L0649: 2,<br>L0659: 2, L0666: 2,<br>H0547: 2, H0519: 2,<br>H0670: 2, S0380: 2, |  |  |



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|  | L0747: 2, L0731: 2,<br>L0587: 2, L0591: 2,<br>L0362: 2, S0192: 2,<br>H0624: 1, T0049: 1,<br>H0663: 1, H0402: 1,<br>H0638: 1, S0376: 1,<br>S0444: 1, S0360: 1,<br>H0208: 1, S6026: 1,<br>H0392: 1, H0635: 1,<br>L0021: 1, H0575: 1,<br>H0581: 1, H0052: 1,<br>H0596: 1, H0597: 1,<br>L0738: 1, H0544: 1,<br>H0024: 1, S0051: 1,<br>H0428: 1, H0622: 1,<br>H0031: 1, H0553: 1,<br>H0644: 1, H0169: 1,<br>H0090: 1, H0038: 1,<br>H0040: 1, H0100: 1,<br>H0494: 1, H0560: 1,<br>H0625: 1, H0646: 1,<br>S0344: 1, H0538: 1,<br>S0422: 1, H0529: 1,<br>L0646: 1, L0662: 1,<br>L0794: 1, L0387: 1,<br>L0766: 1, L0804: 1,<br>L0776: 1, L0527: 1,<br>L0647: 1, L0665: 1,<br>L0438: 1, L0352: 1,<br>H0435: 1, H0658: 1, |  |  |  |  |
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|---------|---------|-----|------------|------|---|--|--|-------|---|--|
|         |         |     |            |      |   |  | H0660: 1, H0672: 1,<br>S0330: 1, S0378: 1,<br>H0518: 1, H0521: 1,<br>H0522: 1, L0779: 1,<br>S0031: 1, H0444: 1,<br>L0589: 1, L0592: 1 and<br>L0608: 1. |       |   |  |
| HFPDO90 | 1049644 | 751 | 456 - 202  | 2926 | Asp-74 to His-85.   |  | S0134: 1, S0222: 1,<br>L0774: 1, L0776: 1 and<br>L0366: 1.   | 5q31  | 121050,<br>131400,<br>138040,<br>153455,<br>159000,<br>179095,<br>181460,<br>192974,<br>192974,<br>600807,<br>601596,<br>601692,<br>601692,<br>601692,<br>601692,<br>602089,<br>602121,<br>602460 |  |
| HVVCB79 | 1050102 | 752 | 195 - 1205 | 2927 | Glu-29 to Cys-39,<br>Val-46 to Ser-52,<br>Asn-58 to Gly-65,<br>Cys-68 to His-82,<br>Tyr-84 to Gly-94, |  | L0659: 19, S0476: 18,<br>H0271: 18, S0152: 15,<br>H0521: 12, L0666: 7,<br>S0132: 6, H0494: 5,<br>L0754: 5, L0601: 5,"                                  | 10q24 | 157640,<br>174900,<br>180250,<br>186770,<br>236730,   |  |



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|--|--|--|--|--|--|--|--|---|
|  |  |  |  | Leu-122 to Trp-138, S0360: 4, L0771: 4,<br>Ala-158 to Leu-170, L0653: 4, L0751: 4,<br>Gly-175 to Arg-182, H0295: 3, H0486: 3,<br>Tyr-203 to Ser-210, H0635: 3, H0416: 3,<br>Gly-246 to Met-258, H0615: 3, L0662: 3,<br>Arg-288 to Gln-296, S0428: 3, L0748: 3,<br>L0747: 3, L0731: 3,<br>H0661: 2, S0376: 2,<br>H0437: 2, H0587: 2,<br>H0485: 2, T0039: 2,<br>H0318: 2, H0545: 2,<br>H0620: 2, H0266: 2,<br>H0090: 2, H0623: 2,<br>L0763: 2, L0646: 2,<br>L0642: 2, L0774: 2,<br>L0775: 2, L0378: 2,<br>L0806: 2, L0664: 2,<br>S0374: 2, H0519: 2,<br>S0406: 2, L0439: 2,<br>L0779: 2, L0755: 2,<br>L0604: 2, L0698: 2,<br>H0149: 1, H0686: 1,<br>H0713: 1, S0212: 1,<br>H0255: 1, S0408: 1,<br>H0637: 1, S0046: 1,<br>H0411: 1, S0278: 1,<br>H0599: 1, H0251: 1,<br>H0457: 1, H0024: 1,<br>H0014: 1, H0328: 1,<br>H0553: 1, H0644: 1, |  |  |  | 271245,<br>278000,<br>278000,<br>600095,<br>600512,<br>601107,<br>601130,<br>602082 |
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|---------|---------|-----|---------|------|--|---|--|--|
| HDPGR19 | 1050167 | 753 | 2 - 670 | 2928 | Ala-32 to Arg-48,<br>Cys-138 to Ser-147,<br>Lys-161 to Glu-166,<br>Pro-179 to Asn-189. | H0598: 1, H0634: 1,<br>H0268: 1, H0056: 1,<br>L0564: 1, S0344: 1,<br>S0002: 1, S0426: 1,<br>L0770: 1, L0372: 1,<br>L0641: 1, L0645: 1,<br>L0648: 1, L0767: 1,<br>L0649: 1, L0389: 1,<br>L0388: 1, L0803: 1,<br>L0654: 1, L0793: 1,<br>L0665: 1, S0052: 1,<br>S0053: 1, S0216: 1,<br>H0658: 1, H0672: 1,<br>H0518: 1, H0522: 1,<br>H0696: 1, L0750: 1,<br>L0752: 1, H0445: 1,<br>S0436: 1, L0596: 1,<br>S0458: 1 and H0506: 1. |  |  |
|         |         |     |         |      |  | AR055: 2, AR033: 1,<br>AR089: 1, AR060: 1,<br>AR096: 1, AR039: 0,<br>AR061: 0, AR052: 0,<br>AR053: 0<br>H0521: 36, L0754: 20,<br>L0748: 13, L0740: 12,<br>L0439: 9, S0440: 8,<br>H0522: 8, L0777: 8,<br>H0580: 7, H0641: 7,<br>L0659: 7, S0126: 7,<br>S0436: 7, H0638: 6.   |  |  |



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| H0616: 6, L0757: 6,<br>L0758: 6, H0486: 5,<br>S0438: 5, S0002: 5,<br>L0775: 5, L0809: 5,<br>S0408: 4, H0574: 4,<br>H0553: 4, S0344: 4,<br>L0805: 4, L0655: 4,<br>L0664: 4, H0518: 4,<br>L0744: 4, L0747: 4,<br>L0749: 4, H0624: 3,<br>S0376: 3, S0360: 3,<br>S0410: 3, H0004: 3,<br>H0581: 3, S0003: 3,<br>S0214: 3, H0428: 3,<br>H0622: 3, H0038: 3,<br>S0142: 3, H0529: 3,<br>L0646: 3, L0771: 3,<br>L0521: 3, L0662: 3,<br>H0689: 3, H0658: 3,<br>S0330: 3, L0779: 3,<br>L0731: 3, L0759: 3,<br>S0342: 2, H0717: 2,<br>S0356: 2, S0444: 2,<br>H0599: 2, H0318: 2,<br>H0457: 2, T0003: 2,<br>H0024: 2, H0057: 2,<br>H0179: 2, H0674: 2,<br>H0591: 2, H0561: 2,<br>L0770: 2, L0769: 2,<br>L0627: 2, L0641: 2, |
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|  | L0649: 2, L0803: 2,<br>L0653: 2, L0776: 2,<br>L0791: 2, L0666: 2,<br>S0374: 2, L0438: 2,<br>H0547: 2, H0593: 2,<br>H0659: 2, H0670: 2,<br>S0152: 2, H0696: 2,<br>H0436: 2, L0751: 2,<br>L0750: 2, L0752: 2,<br>L0591: 2, L0581: 2,<br>L0593: 2, L0362: 2,<br>S0242: 2, H0170: 1,<br>H0556: 1, H0686: 1,<br>H0713: 1, H0294: 1,<br>H0583: 1, L0415: 1,<br>L0808: 1, L0785: 1,<br>H0663: 1, S0418: 1,<br>S0442: 1, S0358: 1,<br>H0637: 1, H0735: 1,<br>H0733: 1, H0339: 1,<br>S0132: 1, H0393: 1,<br>H0411: 1, S0278: 1,<br>S0222: 1, H0601: 1,<br>H0586: 1, H0587: 1,<br>H0333: 1, H0331: 1,<br>L0586: 1, H0013: 1,<br>H0250: 1, H0069: 1,<br>H0505: 1, S0474: 1,<br>H0052: 1, H0596: 1,<br>H0546: 1, H0545: 1, |  |
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|  |  |  | H0046: 1, H0123: 1,<br>H0014: 1, H0373: 1,<br>S0051: 1, H0510: 1,<br>H0266: 1, S0318: 1,<br>S0316: 1, H0328: 1,<br>H0688: 1, H0031: 1,<br>H0032: 1, H0673: 1,<br>H0169: 1, H0598: 1,<br>H0090: 1, T0069: 1,<br>H0100: 1, T0041: 1,<br>T0042: 1, S0370: 1,<br>H0633: 1, H0646: 1,<br>S0426: 1, L0369: 1,<br>L0763: 1, L0638: 1,<br>L0372: 1, L0644: 1,<br>L0764: 1, L0766: 1,<br>L0381: 1, L0774: 1,<br>L0376: 1, L0806: 1,<br>L0652: 1, L0607: 1,<br>L0527: 1, L0515: 1,<br>L0542: 1, L0789: 1,<br>L0663: 1, L0665: 1,<br>S0052: 1, L0352: 1,<br>H0520: 1, H0519: 1,<br>H0690: 1, H0660: 1,<br>S0380: 1, S0350: 1,<br>S0146: 1, S0406: 1,<br>S3014: 1, S0027: 1,<br>L0756: 1, S0031: 1,<br>H0445: 1, S0434: 1, |  |  |
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|---------|---------|-----|----------------|------|---|--|---|--|--|
|         |         |     |                |      |   |  | L0592: 1, S0026: 1,<br>H0667: 1, S0192: 1,<br>S0194: 1, S0196: 1,<br>H0542: 1, H0423: 1,<br>H0422: 1, S0458: 1,<br>H0352: 1 and H0712: 1.   |  |  |
| HVVDX63 | 1050256 | 754 | 2483 -<br>1299 | 2929 | Ala-1 to Ser-19,<br>Gln-50 to Ala-69,<br>Lys-113 to Lys-120,<br>Thr-132 to Trp-147,<br>Glu-162 to Gly-172,<br>Leu-185 to Ser-219,<br>Thr-226 to Tyr-234,<br>Pro-288 to Pro-304,<br>Glu-312 to Lys-324,<br>Cys-344 to Gly-355. |  | H0556: 10, L0758: 9,<br>L0777: 7, H0422: 7,<br>H0271: 6, H0265: 5,<br>H0179: 5, H0634: 5,<br>L0747: 5, L0766: 4,<br>L0664: 4, L0751: 4,<br>H0542: 4, H0423: 4,<br>H0657: 3, S0476: 3,<br>H0069: 3, H0641: 3,<br>L0761: 3, H0555: 3,<br>H0436: 3, L0757: 3,<br>H0222: 2, S0132: 2,<br>H0486: 2, H0553: 2,<br>H0551: 2, L0631: 2,<br>L0769: 2, L0667: 2,<br>L0772: 2, L0662: 2,<br>L0378: 2, L0809: 2,<br>S0052: 2, H0658: 2,<br>H0672: 2, S0328: 2,<br>H0518: 2, L0749: 2,<br>L0750: 2, H0445: 2,<br>L0596: 2, L0362: 2,<br>H0653: 2, H0220: 1,<br>H0713: 1, S0218: 1, |  |  |



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|  | H0663: 1, H0402: 1,<br>S0418: 1, S0442: 1,<br>S0376: 1, S0444: 1,<br>S0046: 1, H0392: 1,<br>N0009: 1, H0042: 1,<br>H0575: 1, S0474: 1,<br>H0581: 1, H0085: 1,<br>H0546: 1, H0545: 1,<br>H0457: 1, H0050: 1,<br>H0014: 1, H0093: 1,<br>H0083: 1, H0060: 1,<br>H0247: 1, H0687: 1,<br>H0622: 1, L0483: 1,<br>S0368: 1, H0032: 1,<br>H0040: 1, H0623: 1,<br>H0561: 1, H0633: 1,<br>H0646: 1, S0142: 1,<br>S0002: 1, L0770: 1,<br>L0646: 1, L0764: 1,<br>L0768: 1, L0364: 1,<br>L0775: 1, L0806: 1,<br>L0653: 1, L0776: 1,<br>L0607: 1, L0657: 1,<br>L0658: 1, L0382: 1,<br>L0789: 1, L0791: 1,<br>L0666: 1, L0665: 1,<br>H0701: 1, H0593: 1,<br>H0435: 1, H0659: 1,<br>H0522: 1, S3014: 1,<br>L0744: 1, L0748: 1, |  |
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|         |         |     |            |      |  |  |   |      |   |
|---------|---------|-----|------------|------|--|--|---|------|---|
| HNOJA87 | 1050282 | 755 | 616 - 2415 | 2930 |  | <p>Ser-35 to Glu-40,<br/>Leu-43 to Lys-63,<br/>Gln-88 to Tyr-97,<br/>Gln-156 to Glu-161,<br/>Val-218 to Phe-223,<br/>Ser-229 to Cys-237,<br/>Phe-323 to Ala-332,<br/>Phe-334 to Ser-339,<br/>Glu-357 to Gly-362,<br/>Ser-382 to Pro-391,<br/>Ser-403 to His-411,<br/>Asp-414 to Leu-425,<br/>Pro-429 to Arg-444,<br/>Ser-481 to Asn-486,<br/>Asp-495 to Lys-503,<br/>Asn-508 to Leu-514,<br/>Lys-528 to Ser-544,<br/>Asp-565 to Tyr-576,<br/>Leu-578 to Gly-584,<br/>Lys-591 to Asn-600.</p> | <p>L0731: 1, S0196: 1 and<br/>H0506: 1.<br/>L0758: 8, L0439: 7,<br/>S0003: 6, L0602: 6,<br/>L0665: 5, S0330: 5,<br/>H0521: 5, L0755: 5,<br/>L0731: 5, L0483: 4,<br/>L0598: 4, L0766: 4,<br/>L0775: 4, L0666: 4,<br/>L0748: 4, H0423: 4,<br/>H0170: 3, H0580: 3,<br/>H0441: 3, H0687: 3,<br/>S0022: 3, L0659: 3,<br/>H0144: 3, H0547: 3,<br/>L0740: 3, L0751: 3,<br/>L0596: 3, H0411: 2,<br/>H0250: 2, S0280: 2,<br/>H0575: 2, H0051: 2,<br/>H0083: 2, H0031: 2,<br/>UNKWN: 2, L0763: 2,<br/>L0776: 2, L0664: 2,<br/>S0148: 2, L0438: 2,<br/>H0660: 2, S0328: 2,<br/>S0380: 2, L0747: 2,<br/>L0777: 2, L0590: 2,<br/>L0592: 2, L0581: 2,<br/>L0594: 2, L0362: 2,<br/>S0194: 2, H0624: 1,<br/>T0002: 1, H0140: 1,<br/>H0685: 1, S0040: 1,</p> | 2q31 | <p>100690,<br/>120180,<br/>120180,<br/>120180,<br/>120180,<br/>120180,<br/>120190,<br/>142989,<br/>156232,<br/>178600,<br/>266100,<br/>600258,<br/>600321</p> |
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|         |         |     |           |      |   |  |        |                              |
|---------|---------|-----|-----------|------|---|--|--------|------------------------------|
| HTPGI65 | 1050419 | 756 | 56 - 1273 | 2931 | <p>Ser-55 to Thr-60,<br/>Glu-97 to Ser-103,<br/>Thr-164 to Glu-170,<br/>Gly-192 to Gly-197,<br/>Leu-204 to Ser-218,<br/>Ala-238 to Ser-250,<br/>Asp-265 to Tyr-292,<br/>Gly-298 to Gly-307,<br/>Gly-351 to Met-359,<br/>Phe-389 to Glu-400.</p> | <p>T0068: 1, H0684: 1,<br/>H0670: 1, S0378: 1,<br/>H0518: 1, H0696: 1,<br/>S0406: 1, H0436: 1,<br/>L0754: 1, L0750: 1,<br/>L0753: 1, L0759: 1,<br/>H0445: 1, S0434: 1,<br/>L0599: 1, L0608: 1,<br/>L0366: 1, S0026: 1,<br/>H0667: 1, S0242: 1,<br/>H0422: 1 and S0424: 1.<br/>S0444: 13, L0751: 12,<br/>S0358: 11, L0659: 11,<br/>S0436: 10, S0442: 8,<br/>S0410: 8, S0406: 8,<br/>S0434: 8, L0662: 6,<br/>H0435: 6, S0440: 5,<br/>L0657: 5, S0354: 4,<br/>T0023: 4, L0764: 4,<br/>L0771: 4, L0666: 4,<br/>H0690: 4, L0743: 4,<br/>L0754: 4, L0601: 4,<br/>H0046: 3, H0615: 3,<br/>H0617: 3, H0032: 3,<br/>H0647: 3, L0372: 3,<br/>L0665: 3, H0593: 3,<br/>L0744: 3, L0748: 3,<br/>H0663: 2, S0376: 2,<br/>S0408: 2, H0036: 2,<br/>H0622: 2, L0483: 2,</p> | 1q32.2 | 145260,<br>600759,<br>601975 |
|---------|---------|-----|-----------|------|---|--|--------|------------------------------|



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|  | H0553: 2, L0646: 2,<br>L0649: 2, L0664: 2,<br>S0374: 2, H0520: 2,<br>H0689: 2, H0682: 2,<br>H0660: 2, S0330: 2,<br>H0555: 2, L0750: 2,<br>L0596: 2, S0430: 1,<br>H0483: 1, H0671: 1,<br>H0661: 1, S0360: 1,<br>H0549: 1, H0431: 1,<br>H0574: 1, H0632: 1,<br>H0270: 1, T0040: 1,<br>T0060: 1, H0590: 1,<br>H0085: 1, H0263: 1,<br>L0040: 1, H0597: 1,<br>H0231: 1, H0316: 1,<br>H0040: 1, H0059: 1,<br>H0117: 1, S0448: 1,<br>S0464: 1, S0306: 1,<br>H0509: 1, H0130: 1,<br>L0763: 1, L0627: 1,<br>L0374: 1, L0765: 1,<br>L0648: 1, L0803: 1,<br>L0774: 1, L0775: 1,<br>L0806: 1, L0652: 1,<br>L0653: 1, L0776: 1,<br>L0540: 1, L0518: 1,<br>L0782: 1, L0382: 1,<br>L0809: 1, L0790: 1,<br>H0547: 1, H0658: 1, |  |
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|---------|---------|-----|----------------|------|---|--|-------|---|--|
|         |         |     |                |      |   | H0670: 1, H0672: 1,<br>S0328: 1, S0380: 1,<br>S0404: 1, H0478: 1,<br>S0432: 1, L0752: 1,<br>L0591: 1, L0608: 1 and<br>H0506: 1.  |       |   |  |
| HHFGN14 | 1050536 | 757 | 1791 -<br>2738 | 2932 | Pro-7 to Ala-17,<br>Pro-28 to Gln-38,<br>Asp-58 to Ser-78,<br>Phe-113 to Asp-120,<br>Tyr-171 to Glu-177,<br>Gln-237 to Gln-246. | S0280: 3, H0581: 3,<br>H0622: 3, H0690: 3,<br>L0751: 3, H0506: 3,<br>S0356: 2, H0670: 2,<br>H0254: 1, S0046: 1,<br>H0411: 1, H0438: 1,<br>H0600: 1, H0632: 1,<br>H0635: 1, H0599: 1,<br>H0009: 1, H0050: 1,<br>H0023: 1, T0010: 1,<br>H0375: 1, H0687: 1,<br>H0039: 1, S0364: 1,<br>H0509: 1, L0527: 1,<br>S0052: 1, H0693: 1,<br>L0438: 1, H0593: 1,<br>H0689: 1, H0660: 1,<br>S0378: 1, H0555: 1,<br>S0392: 1, S0390: 1,<br>S0037: 1 and S0196: 1. | 12ql3 | 107777,<br>123940,<br>139350,<br>139350,<br>148040,<br>148041,<br>148043,<br>148070,<br>231550,<br>600194,<br>600231,<br>600536,<br>600808,<br>600956,<br>601284,<br>601769,<br>601769,<br>601928,<br>602116,<br>602153 |  |
| HTAIN76 | 1050553 | 758 | 83 - 1300      | 2933 | Pro-19 to Ala-25,<br>Pro-30 to Gly-50,<br>Arg-66 to Gly-78.   | L0740: 12, L0653: 6,<br>L0665: 6, H0150: 5,<br>L0439: 5, H0688: 4,<br>L0771: 4, L0659: 4,  |       |   |  |



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|  | L0809: 4, L0751: 4,<br>L0747: 4, L0749: 4,<br>L0779: 4, L0601: 4,<br>S0420: 3, H0486: 3,<br>H0620: 3, H0494: 3,<br>L0662: 3, L0757: 3,<br>S0040: 2, H0662: 2,<br>S0007: 2, H0549: 2,<br>S0222: 2, H0009: 2,<br>H0123: 2, H0024: 2,<br>H0606: 2, H0634: 2,<br>H0413: 2, H0100: 2,<br>L0769: 2, L0794: 2,<br>L0649: 2, L0803: 2,<br>L0655: 2, L0382: 2,<br>L0666: 2, L0731: 2,<br>L0758: 2, L0759: 2,<br>L0605: 2, H0170: 1,<br>T0049: 1, H0663: 1,<br>L0005: 1, S0045: 1,<br>S0046: 1, H0619: 1,<br>H0550: 1, S0220: 1,<br>L0468: 1, H0587: 1,<br>H0643: 1, H0574: 1,<br>H0632: 1, H0635: 1,<br>T0048: 1, H0505: 1,<br>H0597: 1, H0546: 1,<br>H0545: 1, H0046: 1,<br>N0007: 1, H0188: 1,<br>H0622: 1, T0023: 1, |  |
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|----------|---------|-----|---------|------|---|--|--|---|
| HL YBO89 | 1050702 | 759 | 3 - 557 | 2934 | Pro-1 to Thr-10,<br>Ser-25 to Ile-46,<br>Glu-76 to Ile-82,<br>Ile-89 to Gly-95,<br>Lys-109 to Glu-118,<br>Asp-127 to Gly-132,<br>Glu-148 to Leu-155,<br>Glu-161 to Glu-172. | AR089: 11, AR104: 9, Xq28<br>AR060: 6, AR096: 3,<br>AR061: 3, AR055: 2<br>L0803: 7, H0024: 5,<br>L0805: 5, L0750: 5,<br>S0026: 5, H0208: 3,<br>S0440: 3, L0769: 3,<br>S0126: 3, H0670: 3,<br>S0330: 3, S0152: 3,<br>H0411: 2, S0222: 2,<br>S0010: 2, H0046: 2. | AR089: 11, AR104: 9, Xq28<br>AR060: 6, AR096: 3,<br>AR061: 3, AR055: 2<br>L0803: 7, H0024: 5,<br>L0805: 5, L0750: 5,<br>S0026: 5, H0208: 3,<br>S0440: 3, L0769: 3,<br>S0126: 3, H0670: 3,<br>S0330: 3, S0152: 3,<br>H0411: 2, S0222: 2,<br>S0010: 2, H0046: 2. | 300031,<br>300044,<br>300048,<br>300049,<br>300049,<br>300055,<br>300100,<br>300100,<br>300104,<br>300126,<br>301201. |
|----------|---------|-----|---------|------|---|--|--|---|



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|--|---------------------|--|--|--|--|---------|
|  | H0123: 2, L0471: 2, |  |  |  |  | 301590, |
|  | H0428: 2, H0616: 2, |  |  |  |  | 302060, |
|  | H0087: 2, L0763: 2, |  |  |  |  | 302060, |
|  | L0764: 2, L0766: 2, |  |  |  |  | 302060, |
|  | L0375: 2, L0666: 2, |  |  |  |  | 302060, |
|  | H0659: 2, L0740: 2, |  |  |  |  | 302960, |
|  | L0758: 2, L0759: 2, |  |  |  |  | 303700, |
|  | H0445: 2, L0599: 2, |  |  |  |  | 303800, |
|  | H0170: 1, H0686: 1, |  |  |  |  | 303900, |
|  | H0344: 1, L0002: 1, |  |  |  |  | 304800, |
|  | H0657: 1, H0306: 1, |  |  |  |  | 305900, |
|  | S0356: 1, S0358: 1, |  |  |  |  | 305900, |
|  | S0376: 1, T0008: 1, |  |  |  |  | 305900, |
|  | S0132: 1, H0455: 1, |  |  |  |  | 306700, |
|  | L0021: 1, L0022: 1, |  |  |  |  | 306995, |
|  | H0263: 1, H0572: 1, |  |  |  |  | 308310, |
|  | H0050: 1, H0620: 1, |  |  |  |  | 308840, |
|  | H0051: 1, H0083: 1, |  |  |  |  | 308840, |
|  | H0375: 1, S6028: 1, |  |  |  |  | 308840, |
|  | H0687: 1, S0022: 1, |  |  |  |  | 309200, |
|  | H0615: 1, H0688: 1, |  |  |  |  | 309548, |
|  | H0031: 1, H0708: 1, |  |  |  |  | 309620, |
|  | H0068: 1, H0038: 1, |  |  |  |  | 309900, |
|  | H0264: 1, H0272: 1, |  |  |  |  | 310300, |
|  | T0042: 1, H0561: 1, |  |  |  |  | 310400, |
|  | S0144: 1, L0598: 1, |  |  |  |  | 310460, |
|  | H0529: 1, L0631: 1, |  |  |  |  | 310460, |
|  | L0770: 1, L0637: 1, |  |  |  |  | 311300, |
|  | L0800: 1, L0794: 1, |  |  |  |  | 311510, |
|  | L0806: 1, L0382: 1, |  |  |  |  | 314300, |



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|---------|---------|-----|---------|------|--|---|--|--|--------|
| HMEKJ82 | 1050767 | 760 | 1 - 597 | 2935 | Arg-10 to Lys-24,<br>Phe-50 to Arg-57. | L0809: 1, L0787: 1,<br>L0665: 1, H0144: 1,<br>S0374: 1, H0666: 1,<br>S0380: 1, H0696: 1,<br>S3012: 1, S0032: 1,<br>L0747: 1, L0749: 1,<br>L0777: 1, L0752: 1,<br>L0753: 1, L0757: 1,<br>S0434: 1, S0011: 1,<br>S0276: 1 and H0542: 1.   |  |  | 314400 |
|         |         |     |         |      |  | AR089: 2, AR096: 1,<br>AR104: 1, AR060: 0,<br>AR061: 0, AR055: 0<br>S0414: 6, L0754: 6,<br>L0803: 4, H0032: 3,<br>L0774: 3, L0665: 3,<br>L0752: 3, S0418: 2,<br>L0005: 2, H0580: 2,<br>H0431: 2, H0553: 2,<br>H0673: 2, S0422: 2,<br>L0598: 2, L0666: 2,<br>L0748: 2, S0436: 2,<br>L0589: 2, L0603: 2,<br>S0001: 1, L0717: 1,<br>H0415: 1, H0013: 1,<br>H0635: 1, S0280: 1,<br>H0581: 1, S0051: 1,<br>H0266: 1, S0214: 1,<br>H0428: 1, H0598: 1,<br>H0616: 1, S0438: 1, |  |  |        |



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|---------|---------|-----|-----------|------|--|--|--|---|----------|--|
|         |         |     |           |      |  |  |  | S0440: 1, H0641: 1,<br>H0633: 1, H0646: 1,<br>UNKWN: 1, L0646: 1,<br>L0662: 1, L0766: 1,<br>L0659: 1, L0783: 1,<br>L0809: 1, L0790: 1,<br>L0532: 1, H0658: 1,<br>H0521: 1, S0406: 1,<br>L0751: 1, L0779: 1,<br>L0599: 1, S0011: 1,<br>H0423: 1, H0422: 1,<br>S0042: 1 and H0506: 1. |          |  |
| HOFNX17 | 1050969 | 761 | 47 - 604  | 2936 | Ile-13 to Gly-19,<br>Thr-21 to Gln-28,<br>Lys-38 to Ser-45,<br>Glu-62 to Tyr-68,<br>Val-72 to Gly-77,<br>Pro-87 to Ser-93,<br>Thr-117 to Gln-126,<br>Gln-133 to Leu-139. |  |  | H0415: 12, H0414: 2,<br>H0355: 1 and H0517: 1.  | 9q11-q22 | 229600,<br>264300,<br>600542,<br>602014,<br>602088 |
| HAOSY21 | 1051095 | 762 | 153 - 425 | 2937 | Asn-26 to Gly-31,<br>Cys-44 to Asp-50,<br>Gln-85 to Glu-91.  |  |  | H0657: 2, H0686: 1,<br>H0341: 1, L0493: 1,<br>H0144: 1, H0689: 1,<br>L0757: 1 and L0596: 1.   |          |  |
| HMWDB39 | 1051115 | 763 | 2 - 598   | 2938 | Ala-1 to Gly-7, ---<br>Ser-20 to Gly-36,<br>Glu-107 to Thr-112,<br>Glu-114 to Pro-119.   |  |  | S0474: 13, L0758: 13,<br>L0439: 11, L0754: 11,<br>L0752: 10, H0581: 9,<br>L0766: 9, L0740: 9,<br>L0769: 8, H0423: 8,<br>H0547: 7, L0750: 7.   |          |  |



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| L0777: 7, H0013: 6,<br>H0445: 6, L0599: 6,<br>L0005: 5, S0358: 5,<br>S0360: 5, S0414: 5,<br>H0575: 5, L0776: 5,<br>S0126: 5, H0648: 5,<br>H0521: 5, H0171: 4,<br>H0583: 4, H0341: 4,<br>S0212: 4, H0580: 4,<br>H0619: 4, H0427: 4,<br>S0010: 4, S0346: 4,<br>H0046: 4, H0457: 4,<br>H0551: 4, L0763: 4,<br>L0794: 4, L0803: 4,<br>L0666: 4, H0522: 4,<br>L0759: 4, H0543: 4,<br>H0663: 3, H0638: 3,<br>S0442: 3, S0007: 3,<br>S0222: 3, H0244: 3,<br>S0003: 3, H0591: 3,<br>H0040: 3, T0042: 3,<br>S0142: 3, H0529: 3,<br>L0770: 3, L0637: 3,<br>L0771: 3, L0662: 3,<br>L0774: 3, L0805: 3,<br>L0655: 3, L0663: 3,<br>L0664: 3, L0665: 3,<br>H0659: 3, H0670: 3,<br>S0330: 3, H0539: 3,<br>S0152: 3, H0626: 3, |
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| L0744: 3, L0745: 3,<br>L0756: 3, L0731: 3,<br>H0542: 3, H0624: 2,<br>H0650: 2, S0444: 2,<br>H0052: 2, H0544: 2,<br>H0123: 2, H0024: 2,<br>H0014: 2, H0615: 2,<br>L0483: 2, H0032: 2,<br>H0598: 2, H0090: 2,<br>H0269: 2, H0207: 2,<br>H0641: 2, S0344: 2,<br>S0208: 2, S0422: 2,<br>L0369: 2, L0775: 2,<br>L0806: 2, H0519: 2,<br>H0435: 2, S0380: 2,<br>S0406: 2, H0555: 2,<br>L0746: 2, L0747: 2,<br>L0755: 2, L0596: 2,<br>L0588: 2, S0011: 2,<br>H0653: 2, S0196: 2,<br>H0422: 2, S0424: 2,<br>S0462: 2, H0170: 1,<br>L0615: 1, S0040: 1,<br>T0049: 1, S0218: 1,<br>L0002: 1, H0657: 1,<br>S0116: 1, S0110: 1,<br>H0449: 1, H0125: 1,<br>S0420: 1, S0356: 1,<br>S0354: 1, S0376: 1,<br>H0208: 1, S0046: 1, |
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|  | S0132: 1, S0300: 1,<br>L0717: 1, H0437: 1,<br>H0587: 1, T0039: 1,<br>L0586: 1, T0060: 1,<br>H0250: 1, H0156: 1,<br>H0042: 1, H0036: 1,<br>H0037: 1, H0004: 1,<br>H0421: 1, S0049: 1,<br>H0596: 1, H0597: 1,<br>H0545: 1, H0570: 1,<br>H0571: 1, H0569: 1,<br>H0015: 1, H0020: 1,<br>S0388: 1, S0051: 1,<br>H0354: 1, H0510: 1,<br>S6028: 1, S0214: 1,<br>H0328: 1, H0688: 1,<br>H0039: 1, T0006: 1,<br>H0030: 1, H0644: 1,<br>H0212: 1, S0036: 1,<br>H0038: 1, H0372: 1,<br>H0634: 1, H0616: 1,<br>T0067: 1, H0264: 1,<br>H0488: 1, H0413: 1,<br>T0069: 1, S0440: 1,<br>H0647: 1, H0646: 1,<br>H0649: 1, S0002: 1,<br>S0426: 1, L0598: 1,<br>L0762: 1, L0638: 1,<br>L0667: 1, L0772: 1,<br>L0641: 1, L0642: 1, |  |
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|---------|---------|-----|---------|------|---|---|-------|--|
| HAOSZ53 | 1051246 | 764 | 2 - 403 | 2939 | Ala-3 to Arg-8,<br>Asp-48 to Gly-64,<br>Asp-101 to Ser-111. | L0764: 1, L0773: 1,<br>L0767: 1, L0387: 1,<br>L0649: 1, L0804: 1,<br>L0606: 1, L0661: 1,<br>L0807: 1, L0527: 1,<br>L0657: 1, L0659: 1,<br>L0526: 1, L0518: 1,<br>L0783: 1, L0809: 1,<br>L0529: 1, L0532: 1,<br>S0428: 1, H0701: 1,<br>S0374: 1, L0438: 1,<br>L0352: 1, H0593: 1,<br>H0690: 1, H0682: 1,<br>H0660: 1, S0328: 1,<br>H0710: 1, H0214: 1,<br>S0037: 1, S3014: 1,<br>L0748: 1, L0751: 1,<br>L0757: 1, S0031: 1,<br>H0444: 1, S0436: 1,<br>L0485: 1, L0608: 1,<br>L0593: 1, L0594: 1,<br>S0026: 1, H0136: 1,<br>S0192: 1 and H0677: 1,<br>L0751: 4, S0358: 3,<br>L0740: 3, S0418: 2,<br>S0376: 2, H0318: 2,<br>H0623: 2, S0210: 2,<br>L0438: 2, L0741: 2,<br>L0439: 2, L0747: 2,<br>H0506: 2, H0171: 1, | 17p13 | 138190,<br>254210,<br>271900,<br>600179,<br>600977,<br>601202,<br>601777 |
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|---------|---------|-----|---------|------|--|--|---|------------------------------|--|
|         |         |     |         |      |  |  |   | 266100,<br>600258,<br>600321 |  |
| HWLXZ72 | 1051319 | 766 | 2 - 199 | 2941 | Pro-1 to Trp-12.   |  | H0659: 4, L0747: 4,<br>S0474: 3, L0777: 3,<br>S0360: 2, L0653: 2,<br>L0659: 2, L0756: 2,<br>H0686: 1, H0449: 1,<br>H0587: 1, H0413: 1,<br>H0494: 1, S0002: 1,<br>L0770: 1, L0662: 1,<br>L0767: 1, L0803: 1,<br>L0776: 1, L0655: 1,<br>L0665: 1, L0757: 1 and<br>S0194: 1.   |                              |  |
| HUSGQ45 | 1051410 | 767 | 3 - 527 | 2942 | Arg-17 to Gln-24,<br>Tyr-39 to Tyr-47,<br>Arg-50 to Leu-57,<br>Lys-59 to Asn-66,<br>Asn-78 to Val-91,<br>Ser-94 to Ser-133,<br>Thr-139 to Lys-175. |  | L0766: 4, H0090: 3,<br>H0266: 2, H0529: 2,<br>L0803: 2, L0774: 2,<br>L0754: 2, L0747: 2,<br>L0779: 2, L0759: 2,<br>S0114: 1, H0583: 1,<br>H0638: 1, S0356: 1,<br>S0376: 1, H0676: 1,<br>S0410: 1, H0580: 1,<br>H0619: 1, S0222: 1,<br>H0318: 1, H0373: 1,<br>S0003: 1, H0328: 1,<br>H0040: 1, H0616: 1,<br>H0412: 1, L0772: 1,<br>L0800: 1, L0789: 1, |                              |  |



|         |         |     |           |      |  |  |            |   |
|---------|---------|-----|-----------|------|--|--|------------|---|
| HLDRA54 | 1051437 | 768 | 263 - 676 | 2943 | Lys-46 to Gly-63,<br>Ala-75 to Ser-82,<br>Gly-87 to Thr-94,<br>Arg-121 to Gly-126. | L0664: 1, H0144: 1,<br>H0689: 1, H0682: 1,<br>H0672: 1, H0539: 1,<br>S0378: 1, L0751: 1,<br>L0745: 1, L0749: 1,<br>L0750: 1, L0731: 1,<br>L0758: 1, L0593: 1,<br>S0242: 1 and S0194: 1,<br>S0360: 10, S0440: 7,<br>L0794: 7, L0662: 6,<br>H0373: 5, L0666: 5,<br>L0665: 5, H0423: 5,<br>S0358: 4, H0486: 4,<br>L0519: 4, L0663: 4,<br>H0659: 4, S0330: 4,<br>L0731: 4, H0422: 4,<br>H0657: 3, L0471: 3,<br>H0687: 3, H0553: 3,<br>H0551: 3, L0598: 3,<br>L0500: 3, L0770: 3,<br>L0803: 3, L0775: 3,<br>L0805: 3, L0659: 3,<br>L0809: 3, H0710: 3,<br>L0779: 3, L0777: 3,<br>S0218: 2, H0341: 2,<br>H0669: 2, H0662: 2,<br>S0420: 2, H0580: 2,<br>S0222: 2, T0039: 2,<br>H0013: 2, H0251: 2,<br>H0046: 2, H0457: 2, | 3q13.3-q24 | 106165,<br>117700,<br>117700,<br>126451,<br>169600,<br>180380,<br>180380,<br>180380,<br>276902,<br>600882,<br>601199,<br>601199,<br>601199,<br>601682 |
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| S0366: 2, H0560: 2,<br>H0561: 2, S0438: 2,<br>H0509: 2, S0426: 2,<br>H0529: 2, L0369: 2,<br>L0648: 2, L0497: 2,<br>L0784: 2, L0526: 2,<br>L0532: 2, H0547: 2,<br>H0519: 2, H0435: 2,<br>H0670: 2, H0648: 2,<br>S0328: 2, H0539: 2,<br>S0378: 2, H0696: 2,<br>S0404: 2, S0406: 2,<br>H0436: 2, L0740: 2,<br>L0750: 2, L0752: 2,<br>L0588: 2, L0604: 2,<br>S0026: 2, H0686: 1,<br>H0713: 1, H0650: 1,<br>S0212: 1, H0484: 1,<br>H0255: 1, H0663: 1,<br>H0458: 1, S0418: 1,<br>S0442: 1, H0637: 1,<br>H0645: 1, S0278: 1,<br>H0369: 1, H0608: 1,<br>H0600: 1, H0592: 1,<br>H0587: 1, H0485: 1,<br>H0270: 1, T0060: 1,<br>H0427: 1, H0599: 1,<br>H0349: 1, H0706: 1,<br>H0036: 1, H0581: 1,<br>H0052: 1, H0123: 1, |
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| H0355: 1, H0510: 1,<br>H0615: 1, H0428: 1,<br>H0030: 1, H0169: 1,<br>S0364: 1, L0455: 1,<br>H0038: 1, T0067: 1,<br>H0488: 1, H0059: 1,<br>H0494: 1, S0472: 1,<br>H0646: 1, H0652: 1,<br>H0538: 1, S0422: 1,<br>S0002: 1, L0506: 1,<br>L0769: 1, L0764: 1,<br>L0773: 1, L0521: 1,<br>L0649: 1, L0560: 1,<br>L0522: 1, L0774: 1,<br>L0776: 1, L0655: 1,<br>L0606: 1, L0527: 1,<br>L0656: 1, L0558: 1,<br>L0518: 1, L0789: 1,<br>L0664: 1, H0144: 1,<br>H0698: 1, H0702: 1,<br>S0374: 1, T0068: 1,<br>S0148: 1, L0438: 1,<br>H0593: 1, H0660: 1,<br>S0380: 1, H0518: 1,<br>H0521: 1, H0522: 1,<br>S0044: 1, H0478: 1,<br>S0027: 1, L0754: 1,<br>H0445: 1, S0434: 1,<br>L0485: 1, L0581: 1,<br>L0599: 1, L0362: 1, |  |
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|---------|---------|-----|-----------|------|--|--|--|--|---|
|         |         |     |           |      |  |  | S0194: 1, H0542: 1,<br>H0543: 1, S0384: 1 and<br>H0506: 1.   |  |   |
| HNOJR48 | 1051533 | 769 | 34 - 1377 | 2944 |  |  | L0748: 10, L0747: 10, 6p21.3<br>L0662: 9, L0596: 7,<br>H0265: 6, L0666: 6,<br>L0758: 6, H0081: 5,<br>L0766: 5, L0665: 5,<br>L0744: 5, L0750: 5,<br>S0418: 4, H0617: 4,<br>H0529: 4, L0659: 4,<br>L0663: 4, H0144: 4,<br>H0547: 4, H0657: 3,<br>H0661: 3, S0046: 3,<br>H0188: 3, H0687: 3,<br>H0135: 3, H0551: 3,<br>S0440: 3, H0647: 3,<br>L0775: 3, L0655: 3,<br>L0664: 3, S0406: 3,<br>L0743: 3, L0740: 3,<br>L0751: 3, L0731: 3,<br>H0445: 3, L0591: 3,<br>H0543: 3, H0423: 3,<br>H0686: 2, S0134: 2,<br>S0420: 2, S0358: 2,<br>H0013: 2, H0635: 2,<br>H0618: 2, S0010: 2,<br>H0545: 2, N0006: 2,<br>L0471: 2, H0622: 2,<br>L0455: 2, H0412: 2, |  | 106300,<br>108800,<br>120290,<br>120290,<br>120810,<br>120820,<br>142857,<br>142858,<br>150270,<br>167250,<br>170261,<br>177900,<br>179450,<br>201910,<br>217000,<br>222100,<br>233100,<br>235200,<br>248611,<br>256550,<br>256550,<br>600202,--<br>600261,<br>601868,<br>602280,<br>602475 |







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|         |         |     |         |      |  |  |  |  |  |
|---------|---------|-----|---------|------|--|--|--|--|--|
|         |         |     |         |      |  |  | L0383: 1, L0528: 1,<br>L0788: 1, L0791: 1,<br>L0532: 1, H0697: 1,<br>H0519: 1, H0593: 1,<br>H0672: 1, H0539: 1,<br>S0152: 1, S0404: 1,<br>H0555: 1, H0436: 1,<br>H0478: 1, H0479: 1,<br>S3014: 1, S0027: 1,<br>L0741: 1, L0745: 1,<br>L0608: 1, L0593: 1,<br>L0601: 1, L0603: 1,<br>H0668: 1, S0026: 1,<br>H0136: 1, S0192: 1 and<br>H0506: 1.         |  |  |
| HKIXH35 | 1051883 | 770 | 2 - 994 | 2945 | Lys-7 to Glu-27,<br>Ser-48 to Gln-53,<br>Gln-58 to Pro-69,<br>Ala-84 to Tyr-93,<br>Ala-114 to Leu-127,<br>Ser-173 to Arg-180,<br>Met-188 to Pro-193,<br>Pro-200 to Leu-205,<br>Ile-228 to Asp-233,<br>Gln-271 to Cys-281,<br>Glu-289 to Cys-304. |  | L0748: 13, L0758: 5,<br>L0749: 4, L0439: 3,<br>H0441: 2, H0052: 2,<br>H0090: 2, L0774: 2,<br>L0775: 2, L0517: 2,<br>L0666: 2, L0740: 2,<br>L0731: 2, L0759: 2,<br>S0134: 1, L0415: 1,<br>H0318: 1, H0327: 1,<br>H0563: 1, S0050: 1,<br>H0594: 1, H0266: 1,<br>H0252: 1, H0644: 1,<br>H0135: 1, H0616: 1,<br>H0264: 1, S0438: 1,<br>L0369: 1, L0763: 1, |  |  |



|         |         |     |           |      |   |   |      |  |
|---------|---------|-----|-----------|------|---|---|------|--|
| HHEB192 | 1051903 | 771 | 67 - 2094 | 2946 | His-152 to Lys-160,<br>Gly-276 to Ser-281,<br>Ser-376 to Asp-383,<br>Arg-389 to Gly-400,<br>Ala-512 to Ser-529,<br>Asp-576 to Thr-581,<br>Gly-619 to Asp-624. | L0796: 1, L0662: 1,<br>L0804: 1, L0375: 1,<br>L0787: 1, S0428: 1,<br>H0593: 1, H0689: 1,<br>H0436: 1, L0743: 1,<br>L0754: 1 and L0603: 1,<br>AR089: 8, AR053: 6,<br>AR060: 6, AR096: 5,<br>AR039: 5, AR055: 4,<br>AR104: 4, AR033: 4,<br>AR061: 2, AR052: 0,<br>H0717: 14, H0703: 14,<br>H0699: 9, H0716: 8,<br>H0685: 7, H0730: 7,<br>H0688: 6, H0729: 5,<br>H0687: 5, H0622: 4,<br>H0424: 4, H0684: 4,<br>H0670: 4, S0356: 3,<br>S0376: 3, H0728: 3,<br>L0163: 3, H0615: 3,<br>H0039: 3, H0494: 3,<br>H0724: 3, H0689: 3,<br>H0683: 3, H0709: 3,<br>H0694: 3, L0751: 3,<br>H0624: 2, H0171: 2,<br>H0686: 2, H0713: 2,<br>H0663: 2, S0358: 2,<br>H0722: 2, H0036: 2,<br>H0100: 2, H0695: 2,<br>H0725: 2, H0723: 2, | 1q32 | 114208,<br>114208,<br>119300,<br>120620,<br>120620,<br>120920,<br>134370,<br>134370,<br>134370,<br>134580,<br>145260,<br>150310,<br>150310,<br>179820,<br>191045,<br>600105,<br>600759,<br>601494,<br>601975 |
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| H0691: 2, H0521: 2,<br>S0028: 2, L0744: 2,<br>L0758: 2, S0031: 2,<br>H0542: 2, H0664: 1,<br>H0662: 1, S0354: 1,<br>H0580: 1, S0132: 1,<br>H0619: 1, H0261: 1,<br>S6016: 1, S0222: 1,<br>H0455: 1, H0333: 1,<br>H0486: 1, H0194: 1,<br>H0263: 1, H0597: 1,<br>H0545: 1, H0046: 1,<br>H0009: 1, H0050: 1,<br>H0012: 1, H0051: 1,<br>T0006: 1, H0213: 1,<br>L0456: 1, H0038: 1,<br>H0616: 1, H0551: 1,<br>H0059: 1, S0038: 1,<br>H0561: 1, L0761: 1,<br>L0374: 1, L0771: 1,<br>L0766: 1, L0776: 1,<br>L0527: 1, L0666: 1,<br>L0665: 1, S0052: 1,<br>H0697: 1, H0698: 1,<br>S0374: 1, H0726: 1,<br>H0520: 1, H0690: 1,<br>H0435: 1, H0660: 1,<br>H0666: 1, H0539: 1,<br>S0390: 1, S0206: 1,<br>L0743: 1, L0748: 1, |
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|---------|---------|-----|-----------|------|--|--|--|--|---------|---|--|
|         |         |     |           |      |  |  |  | L0740: 1, L0754: 1,<br>L0779: 1, L0777: 1,<br>L0731: 1, S0394: 1,<br>S0460: 1 and H0677: 1.  |         |   |  |
| HPTGB84 | 1051953 | 772 | 793 - 200 | 2947 | Phe-59 to Glu-68,<br>Lys-105 to Gly-111. |  |  | H0660: 3, S0358: 2,<br>L0755: 2, L0759: 2,<br>H0624: 1, S0040: 1,<br>S0342: 1, H0484: 1,<br>H0638: 1, H0550: 1,<br>H0486: 1, H0427: 1,<br>H0706: 1, S0010: 1,<br>S0182: 1, H0012: 1,<br>H0405: 1, H0673: 1,<br>H0488: 1, H0059: 1,<br>T0042: 1, H0494: 1,<br>S0150: 1, H0647: 1,<br>S0144: 1, L0772: 1,<br>L0766: 1, H0520: 1,<br>H0547: 1, H0435: 1,<br>H0214: 1, S3012: 1,<br>L0750: 1, L0777: 1,<br>L0758: 1, H0445: 1,<br>L0601: 1 and S0276: 1. |         |   |  |
| HVCCD05 | 1051983 | 773 | 3 - 968   | 2948 |  |  |  | H0666: 440, H0660: 3,<br>H0309: 1, L0471: 1,<br>H0328: 1, H0383: 1,<br>L0769: 1, L0789: 1 and<br>S0152: 1.   | 17q11.2 | 154275,<br>162200,<br>162200,<br>182138,<br>239100,<br>600881,<br>601954, |  |



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| HPYSC40 | 1052158 | 774 | 2 - 583   | 2949 | Ile-1 to Pro-10,<br>Pro-36 to Glu-43,<br>Arg-92 to Cys-98,<br>Glu-106 to Lys-115,<br>Pro-174 to Leu-179.  | L0751: 11, L0777: 9,<br>L0809: 6, H0100: 4,<br>H0112: 3, L0783: 3,<br>L0747: 3, H0644: 2,<br>H0670: 2, L0755: 2,<br>S0040: 1, H0013: 1,<br>H0031: 1, L0794: 1,<br>H0144: 1 and L0759: 1.                    | 9q34   | 602403<br>125270,<br>125270,<br>128100,<br>137350,<br>191100,<br>215700,<br>223360,<br>268900,<br>601850 |
| HDDMT56 | 1052261 | 775 | 155 - 844 | 2950 | Pro-8 to Asp-23,<br>Leu-27 to Ser-38,<br>Thr-40 to Arg-69,<br>Arg-73 to Asp-97,<br>Asp-108 to Asp-126,<br>Glu-135 to Ile-159,<br>Pro-176 to Ala-181,<br>Lys-184 to Asp-192,<br>Val-202 to Arg-210,<br>Thr-215 to His-221. | H0641: 1, L0775: 1<br>and H0659: 1.   |        |  |
| HVVAW02 | 1052553 | 776 | 2 - 652   | 2951 | Ala-1 to Ala-8,<br>Pro-26 to Tyr-32,<br>Gly-48 to Pro-53,<br>Asp-132 to Gly-137,<br>Val-139 to Leu-144,<br>Lys-165 to Gly-171,<br>Ser-191 to Ala-198.   | S0358: 6, L0748: 5,<br>L0777: 5, H0171: 4,<br>H0341: 4, S0408: 4,<br>H0597: 4, H0620: 4,<br>L0754: 4, L0749: 4,<br>S0360: 3, H0596: 3,<br>H0545: 3, H0494: 3,<br>S0210: 3, L0769: 3,<br>S0374: 3, H0659: 3, | 7q21.1 | 129900,<br>154276,<br>171050,<br>171060,<br>602136,<br>602136,<br>602136,<br>602447                      |



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| S0040: 2, H0657: 2,<br>H0661: 2, S0376: 2,<br>S0007: 2, S0045: 2,<br>S0046: 2, S0222: 2,<br>H0431: 2, H0013: 2,<br>H0530: 2, H0014: 2,<br>H0266: 2, H0328: 2,<br>H0644: 2, H0100: 2,<br>L0771: 2, L0662: 2,<br>L0803: 2, L0438: 2,<br>H0547: 2, S0126: 2,<br>S0330: 2, L0743: 2,<br>L0439: 2, L0751: 2,<br>H0445: 2, S0026: 2,<br>S0276: 2, S0196: 2,<br>H0265: 1, T0049: 1,<br>S0218: 1, H0656: 1,<br>H0638: 1, S0356: 1,<br>S0444: 1, S0410: 1,<br>H0580: 1, S0132: 1,<br>H0393: 1, S0300: 1,<br>H0586: 1, L0622: 1,<br>H0486: 1, T0109: 1,<br>S0280: 1, H0599: 1,<br>S0010: 1, S0049: 1,<br>H0204: 1, H0327: 1,<br>H0123: 1, H0051: 1,<br>H0275: 1, H0083: 1,<br>H0629: 1, H0271: 1,<br>H0188: 1, H0290: 1, |
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|  | S0003: 1, T0006: 1,<br>H0031: 1, H0628: 1,<br>H0673: 1, H0068: 1,<br>H0598: 1, H0163: 1,<br>H0090: 1, H0040: 1,<br>H0551: 1, H0412: 1,<br>L0370: 1, H0641: 1,<br>H0647: 1, L0520: 1,<br>L0762: 1, L0770: 1,<br>L0667: 1, L0764: 1,<br>L0521: 1, L0794: 1,<br>L0766: 1, L0650: 1,<br>L0774: 1, L0775: 1,<br>L0376: 1, L0806: 1,<br>L0653: 1, L0776: 1,<br>L0659: 1, L0540: 1,<br>L0384: 1, L0383: 1,<br>L0792: 1, H0520: 1,<br>H0519: 1, H0689: 1,<br>H0682: 1, H0666: 1,<br>H0648: 1, H0672: 1,<br>S0380: 1, H0518: 1,<br>H0521: 1, H0522: 1,<br>S0404: 1, S0406: 1,<br>H0187: 1, L0612: 1,<br>L0750: 1, L0731: 1,<br>L0759: 1, L0588: 1,<br>L0366: 1, H0136: 1,<br>S0192: 1, S0194: 1,<br>H0543: 1 and H0422: 1. |  |  |  |  |  |
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|---------|---------|-----|-----------|------|--|--|--|--|
| HOGCS42 | 1052557 | 777 | 223 - 852 | 2952 | Gly-156 to Met-161,<br>Cys-186 to Lys-197. | AR039: 7, AR052: 6,<br>AR089: 5, AR033: 4,<br>AR104: 3, AR053: 3,<br>AR096: 3, AR055: 3,<br>AR061: 3, AR060: 2<br>S0358: 15, H0622: 15,<br>S0354: 14, S0360: 11,<br>H0435: 11, S0356: 9,<br>H0039: 9, L0666: 9,<br>L0751: 9, H0553: 8,<br>H0506: 8, H0689: 7,<br>L0748: 7, H0661: 6,<br>L0659: 6, L0665: 6,<br>S0376: 5, L0743: 5,<br>H0484: 4, H0483: 4,<br>H0059: 4, L0764: 4,<br>L0771: 4, L0662: 4,<br>L0809: 4, S0330: 4,<br>H0615: 3, H0688: 3,<br>H0040: 3, L0763: 3,<br>L0364: 3, L0774: 3,<br>L0663: 3, H0683: 3,<br>H0670: 3, H0672: 3,<br>L0750: 3, L0731: 3,<br>H0663: 2, H0549: 2,<br>H0046: 2, H0014: 2,<br>H0124: 2, H0494: 2,<br>S0450: 2, L0374: 2,<br>L0765: 2, L0804: 2,<br>L0378: 2, L0653: 2, |  |  |
|---------|---------|-----|-----------|------|--|--|--|--|



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|  | L0529: 2, H0593: 2,<br>H0658: 2, S0152: 2,<br>L0439: 2, L0779: 2,<br>L0601: 2, H0294: 1,<br>S0430: 1, H0675: 1,<br>H0676: 1, H0370: 1,<br>H0587: 1, H0642: 1,<br>T0109: 1, H0204: 1,<br>L0040: 1, L0738: 1,<br>H0620: 1, H0024: 1,<br>H0356: 1, H0375: 1,<br>L0194: 1, T0023: 1,<br>L0483: 1, H0033: 1,<br>H0424: 1, H0644: 1,<br>H0264: 1, H0488: 1,<br>H0413: 1, H0334: 1,<br>S0352: 1, S0306: 1,<br>S0440: 1, H0647: 1,<br>H0646: 1, H0652: 1,<br>L0373: 1, L0646: 1,<br>L0648: 1, L0803: 1,<br>L0375: 1, L0376: 1,<br>L0806: 1, L0658: 1,<br>L0382: 1, L0528: 1,<br>L0664: 1, S0374: 1,<br>H0690: 1, H0682: 1,<br>H0648: 1, S0328: 1,<br>H0478: 1, S0432: 1,<br>L0744: 1, L0754: 1,<br>L0747: 1, L0749: 1, |  |
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| HAZAA59 | 1052593 | 778 | 29 - 745 | 2953 |  | L0755: 1, L0759: 1,<br>L0596: 1, H0543: 1,<br>S0462: 1 and H0352: 1.<br><br>S0358: 4, L0752: 4,<br>H0012: 3, H0266: 3,<br>L0740: 3, L0731: 3,<br>H0615: 2, L0772: 2,<br>L0776: 2, L0565: 2,<br>L0605: 2, L0608: 2,<br>L0362: 2, H0423: 2,<br>H0556: 1, S0114: 1,<br>S0134: 1, H0341: 1,<br>H0255: 1, H0664: 1,<br>H0638: 1, S0356: 1,<br>H0676: 1, H0441: 1,<br>H0392: 1, H0613: 1,<br>H0333: 1, H0632: 1,<br>L0021: 1, S0049: 1,<br>H0251: 1, H0327: 1,<br>H0572: 1, L0471: 1,<br>H0271: 1, H0252: 1,<br>T0023: 1, H0135: 1,<br>H0591: 1, H0560: 1,<br>S0150: 1, L0637: 1,<br>L3904: 1, L0764: 1,<br>L0364: 1, L0803: 1,<br>L0661: 1, L0647: 1,<br>L0790: 1, L0663: 1,<br>H0144: 1, S0374: 1,<br>H0547: 1, H0690: 1, |  |  |
|---------|---------|-----|----------|------|--|---|--|--|